Spring 2014

Nebraska State Accountability (NeSA)

Reading, Mathematics and Science

Alternate Assessment

Technical Report Appendices

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Prepared by Data Recognition Corporation


DATA RECOGNITION
DRC
CORPORATION

Appendix A: NeSA-AAR Test Blueprint

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
Grade 3						
Gr3 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 3.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 3.1.5.a General Apply word structure elements, known words, and word patterns to determine meanings Extended ***Identify plural words and illustrations that show more than one***	4	0-1	1-2	1-2	1-2	3-7
LA 3.1.5.c General Apply context clues and text features to help infer meaning of unknown words Extended ***Use context clues and text features to determine meaning of unknown words***	4	0	1-2	1-2	1-2	3-6
LA 3.1.5.d General Identify semantic relationships Extended ***Categorize words or illustrations***	3	0	0-1	0-2	0	0-3
Gr3 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 3.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 3.1.6.a General Identify author's purpose(s) to support text comprehension Extended ***Recognize that authors communicate their thoughts through writing***	4	0	0-1	1-2	0-1	1-4
LA 3.1.6.b General Identify elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 3.1.6.c General Retell and summarize narrative text including characters, setting, and plot with supporting details Extended ***Recall basic facts from narrative text***	4	0	0-1	1-2	0-1	1-4
LA 3.1.6.d General Identify literary devices and explain the ways in which language is used Extended ***Identify the literary device, onomatopoeia***	4	0	0-1	1-2	0-1	1-4

LA 3.1.6.e General Retell and summarize the main idea from informational text using supporting details Extended ***Identify the main idea from an informational text***	4	0	0-1	1-2	0-1	1-4
LA 3.1.6.f General Recognize and apply knowledge of organizational patterns found in informational text Extended ***Identify the first event in a three-step organizational pattern in informational text using illustrations***	4	0	0-1	1-2	0-1	1-4
LA 3.1.6.g General Apply knowledge of text features to locate information and gain meaning from a text Extended ***Apply knowledge of text features to gain meaning***	4	0-1	0-1	1-2	0-1	1-5
LA 3.1.6.h General Describe the defining characteristics of narrative and informational genres Extended ***Recognize informational (nonfiction) genres***	4	0	0-1	0-1	0-1	1-4
LA 3.1.6.j General Generate and/or answer literal, inferential, and critical questions, supporting answers using prior knowledge and literal and inferential information from the text Extended ***Answer literal questions using information from the text***	4	0	0-1	0-1	0-1	1-4

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
Grade 4						
Gr4 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 4.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 4.1.5.a General Apply knowledge of word structure elements, known words, and word patterns to determine meanings Extended ***Identify singular and plural illustrations and words representing nouns***	4	0-1	1-2	1-2	1-2	3-7
LA 4.1.5.c General Apply context clues and text features to infer meaning of unknown words Extended ***Use context clues and text features to determine meaning of unknown words***	4	0	1-2	1-2	1-2	3-6
LA 4.1.5.d General Identify semantic relationships Extended ***Identify word patterns/families***	3	0	0-1	0-2	0	0-3
Gr4 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 4.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 4.1.6.a General Identify author's purpose(s) and recognize how author perspective influences text Extended ***Identify author's purpose through the feelings of the reader***	4	0	0-1	1-2	0-1	1-4
LA 4.1.6.b General Identify and analyze elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 4.1.6.c General Summarize narrative text including characters, setting, and plot with supporting details Extended ***Recall basic facts from narrative text***	4	0	0-1	1-2	0-1	1-4
LA 4.1.6.d General Identify literary devices and explain the ways in which language is used Extended ***Identify the literary device of imagery by matching descriptions to illustrations***	4	0	0-1	1-2	0-1	1-4
LA 4.1.6.e General Retell and summarize the main idea from informational text using supporting details Extended ***Identify the main idea from an informational text***	4	0	0-1	1-2	0-1	1-4

LA 4.1.6.f General Recognize and apply knowledge of organizational patterns found in informational text Extended ***Identify the first and last event in a three-step organizational pattern in informational text using illustrations***	4	0	0-1	1-2	0-1	1-4
LA 4.1.6.g General Apply knowledge of text features to locate information and gain meaning from a text Extended ***Apply knowledge of text features to locate information on simple maps***	4	0-1	0-1	1-2	0-1	1-5
LA 4.1.6.h General Describe the defining characteristics of narrative and informational genres Extended ***Recognize narrative (fiction) genres***	4	0	0-1	0-1	0-1	0-3
LA 4.1.6.j General Generate and/or answer literal, inferential, and critical questions, supporting answers using prior knowledge and literal and inferential information from the text Extended ***Answer literal questions using information from the text***	4	0	1-2	1-2	0-1	2-5

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
Grade 5						
Gr5 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 5.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 5.1.5.a General Apply knowledge of word structure elements, known words, and word patterns to determine meanings Extended ***Identify the illustration or word representing parts of speech and word structure***	4	0-1	1-2	1-2	1-2	3-7
LA 5.1.5.c General Select and apply context clues and text features to determine meaning of unknown words in a variety of text structures Extended ***Use context clues and text features to determine meaning of unknown words in a variety of text structures***	4	0	1-2	1-2	1-2	3-6
LA 5.1.5.d General Identify semantic relationships Extended ***Identify synonyms and antonyms using illustrations or words***	3	0	0-1	0-2	0	0-3
Gr5 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 5.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 5.1.6.a General Identify author's purpose(s) and recognize how author perspective influences text Extended ***Determine if the author's purpose is to entertain***	4	0	0-1	1-2	0-1	1-4
LA 5.1.6.b General Identify and analyze elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 5.1.6.c General Summarize narrative text including characters, setting, plot, and theme with supporting details Extended ***Recall basic facts from narrative text***	4	0	0-1	1-2	0-1	1-4
LA 5.1.6.d General Identify literary devices and explain the ways in which language is used Extended ***Identify the literary device of alliteration***	4	0	0-1	1-2	0-1	1-4

LA 5.1.6.e General Summarize and analyze the main idea from informational text using supporting details Extended ***Identify the main idea from an informational text using supporting details***	4	0	0-1	1-2	0-1	1-4
LA 5.1.6.f General Understand and apply knowledge of organizational patterns found in informational text Extended ***Sequence three events in informational text using illustrations***	4	0	0-1	1-2	0-1	1-4
LA 5.1.6.g General Apply knowledge of text features to locate information and gain meaning from a text Extended ***Apply knowledge of text features to locate information on schedule or chart***	4	0-1	0-1	1-2	0-1	1-5
LA 5.1.6.h General Describe the defining characteristics of narrative and informational genres Extended ***Discriminate between informational and narrative (fiction and nonfiction) genres***	4	0	0-1	0-1	0-1	0-3
LA 5.1.6.k General Generate and/or answer literal, inferential, and critical questions, supporting answers using prior knowledge and literal and inferential information from the text and additional sources Extended ***Answer literal questions using information from the text to support answers***	4	0	1-2	1-2	0-1	2-5

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
Grade 6						
Gr6 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 6.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 6.1.5.a General Determine the meaning of words through structural analysis, using knowledge of Greek, Latin, and Anglo Saxon roots, prefixes, and suffixes to understand complex words, including words in science, mathematics, and social studies Extended ***Determine the meaning of words using roots, prefixes, and suffixes, including words in science, mathematics, and social studies***	4	0-1	1-2	1-2	1-2	3-7
LA 6.1.5.c General Select and apply knowledge of context clues and text features to determine meaning of unknown words in a variety of text structures Extended ***Use context clues and text features to determine meaning of unknown words in a variety of text structures***	4	0	1-2	1-2	1-2	3-6
LA 6.1.5.d General Identify semantic relationships Extended ***Identify semantic relationships***	3	0	0-1	0-2	0	0-3
Gr6 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 6.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 6.1.6.a General Explain how author's purpose and perspective affect the meaning and reliability of the text Extended ***Determine if the author's purpose is to inform***	4	0	0-1	1-2	0-1	1-4
LA 6.1.6.b General Identify and analyze elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 6.1.6.c General Summarize narrative text using understanding of characters, setting, sequence of events, plot, and theme Extended ***Recall basic facts from narrative text***	4	0	0-1	1-2	0-1	1-4
LA 6.1.6.d General Interpret and explain the author's use of literary devices Extended ***Identify the use of literary devices in a narrative passage***	4	0	0-1	1-2	0-1	1-4

LA 6.1.6.e General Summarize, analyze, and synthesize informational text using main idea and supporting details Extended ***Identify and retell the main idea from informational text***	4	0	0-1	1-2	0-1	1-4
LA 6.1.6.f General Apply knowledge of organizational patterns found in informational text Extended ***Identify organizational patterns found in informational text***	4	0	0-1	1-2	0-1	1-4
LA 6.1.6.g General Apply knowledge of text features to locate information and gain meaning from a text Extended ***Use text features to locate information***	4	0-1	0-1	1-2	0-1	1-5
LA 6.1.6.h General Distinguish between the defining characteristics of different narrative and informational genres Extended ***Identify a story book, text book, and magazine***	4	0	0-1	0-1	0-1	0-3
LA 6.1.6.k General Generate and/or answer literal, inferential, critical, and interpretive questions, supporting answers using prior knowledge and information from the text and additional sources Extended ***Answer literal questions using prior knowledge and supporting information from the text***	4	0	1-2	1-2	0-1	2-5

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
Grade 7						
Gr7 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 7.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 7.1.5.a General Determine the meaning of words through structural analysis, using knowledge of Greek, Latin, and Anglo Saxon roots, prefixes, and suffixes to understand complex words, including words in science, mathematics, and social studies Extended ***Determine the meaning of words using roots, prefixes, and suffixes, including words in science, mathematics, and social studies***	4	0-1	1-2	1-2	1-2	3-7
LA 7.1.5.c General Select and apply knowledge of context clues and text features appropriate to a particular text to determine meaning of unknown words Extended ***Use context clues and text features to determine meaning of unknown words***	4	0	1-2	1-2	1-2	3-6
LA 7.1.5.d General Analyze semantic relationships Extended ***Identify semantic relationships***	3	0	0-1	0-2	0	0-3
Gr7 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 7.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 7.1.6.a General Analyze the meaning, reliability, and validity of the text considering author's purpose and perspective Extended ***Determine if the author's purpose is to entertain or inform the reader***	4	0	0-1	1-2	0-1	1-4
LA 7.1.6.b General Identify and analyze elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 7.1.6.c General Analyze author's use of literary devices Extended ***Identify the use of literary devices in a narrative passage***	4	0	0-1	1-2	0-1	1-4
LA 7.1.6.d General Summarize, analyze, and synthesize informational text using main idea and supporting details Extended ***Identify the main idea from informational text***	4	0	0-1	1-2	0-1	1-4

LA 7.1.6.e General Apply knowledge of organizational patterns found in informational text Extended ***Identify organizational patterns found in informational text***	4	0	0-1	1-2	0-1	1-4
LA 7.1.6.f General Apply knowledge of text features to locate information and gain meaning from a text Extended ***Use text features to locate information***	4	0-1	0-1	1-2	0-1	1-5
LA 7.1.6.g General Explain and make inferences based on the characteristics of narrative and informational genres Extended ***Identify narrative and informational genres***	4	0	0-1	0-1	0-1	0-3
LA 7.1.6.j General Generate and/or answer literal, inferential, critical, and interpretive questions, analyzing prior knowledge, information from the text and additional sources, to support answers Extended ***Answer literal questions using prior knowledge and supporting information from the text***	4	0	1-2	1-2	0-1	2-5

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
Grade 8						
Gr8 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 8.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 8.1.5.a General Determine the meaning of words through structural analysis, using knowledge of Greek, Latin, and Anglo Saxon roots, prefixes, and suffixes to understand complex words, including words in science, mathematics, and social studies Extended ***Determine the meaning of words using roots, prefixes, and suffixes, including words in science, mathematics, and social studies***	4	0-1	1-2	1-2	1-2	3-7
LA 8.1.5.c General Select a context clue strategy to determine meaning of unknown words appropriate to text Extended ***Use context clues and text features to determine meaning of unknown words appropriate to text***	4	0	1-2	1-2	1-2	3-6
LA 8.1.5.d General Analyze semantic relationships Extended ***Identify semantic relationships***	3	0	0-1	0-2	0	0-3
Gr8 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 8.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 8.1.6.a General Analyze the meaning, reliability, and validity of the text considering author's purpose and perspective, and information from additional sources Extended ***Determine if the author's purpose is to persuade the reader***	4	0	0-1	1-2	0-1	1-4
LA 8.1.6.b General Identify and analyze elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 8.1.6.c General Analyze author's use of literary devices Extended ***Identify the use of literary devices in a narrative passage***	4	0	0-1	1-2	0-1	1-4
LA 8.1.6.d General Summarize, analyze, and synthesize informational text using main idea and supporting details Extended ***Identify and retell the main idea and supporting details from informational text***	4	0	0-1	1-2	0-1	1-4
LA 8.1.6.e General Apply knowledge of organizational patterns found in informational text Extended ***Identify organizational patterns found in informational text***	4	0	0-1	1-2	0-1	1-4

LA 8.1.6.f General Analyze and evaluate information from text features Extended ***Use text features to locate information***	4	0-1	0-1	1-2	0-1	1-5
LA 8.1.6.g General Analyze and make inferences based on the characteristics of narrative and informational genres Extended ***Identify narrative and informational genres***	4	0	0-1	0-1	0-1	0-3
LA 8.1.6.j General Generate and/or answer literal, inferential, critical, and interpretive questions, analyzing and synthesizing prior knowledge, information from the text and additional sources, to support answers Extended ***Answer literal and inferential questions using prior knowledge and supporting information from the text***	4	0	1-2	1-2	0-1	2-5

Nebraska State Accountability - Alternate Assessment of Reading (NeSA-AAR) Table of Specifications						
High School						
Gr12 Vocabulary	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 12.1.5 Vocabulary: Students will build literary, general academic, and content specific grade level vocabulary.						
LA 12.1.5.a General Determine the meaning of words through structural analysis, using knowledge of Greek, Latin, and Anglo Saxon roots, prefixes, and suffixes to understand complex words, including words in science, mathematics, and social studies Extended ***Determine the meaning of words using roots, prefixes, and suffixes, including words in science, mathematics, and social studies***	4	0-1	1-2	1-2	1-2	3-7
LA 12.1.5.c General Independently apply a context clue strategy to determine meaning of unknown words in text Extended ***Use context clues and text features to determine meaning of unknown words in text***	4	0	1-2	1-2	1-2	3-6
LA 12.1.5.d General Use semantic relationships to evaluate, defend, and make judgments Extended ***Identify semantic relationships***	3	0	0-1	0-2	0	0-3
Gr12 Comprehension	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Total**
LA 12.1.6 Students will extract and construct meaning using prior knowledge, applying text information, and monitoring comprehension while reading grade level text.						
LA 12.1.6.a General Evaluate the meaning, reliability, and validity of the text considering author's purpose, perspective, and information from additional sources Extended ***Determine if the author's purpose is to entertain, inform, or persuade***	4	0	0-1	1-2	0-1	1-4
LA 12.1.6.b General Analyze and evaluate elements of narrative text Extended ***Identify elements of narrative text***	4	0	0-1	1-2	0-1	1-4
LA 12.1.6.c General Analyze the function and critique the effects of the author's use of stylistic and literary devices Extended ***Identify the use of literary devices in a narrative passage***	4	0	0-1	1-2	0-1	1-4
LA 12.1.6.d General Summarize, analyze, synthesize, and evaluate informational text Extended ***Identify and retell the main idea and supporting details from informational text***	4	0	0-1	1-2	0-1	1-4

LA 12.1.6.e General Apply knowledge of organizational patterns found in informational text Extended ***Identify organizational patterns found in informational text***	4	0	0-1	1-2	0-1	1-4
LA 12.1.6.f General Analyze and evaluate information from text features Extended ***Use text features to locate information***	4	0-1	0-1	1-2	0-1	1-5
LA 12.1.6.g General Analyze and evaluate inferences based on the characteristics of narrative and informational genres and provide evidence from the text to support understanding Extended ***Identify narrative and informational genres***	4	0	0-1	0-1	0-1	0-3
LA 12.1.6.j General Generate and/or answer literal, inferential, critical, and interpretive questions, analyzing, synthesizing, and evaluating prior knowledge, information from the text and additional sources, to support answers Extended ***Generate/answer literal and inferential questions using prior knowledge and supporting information from the text***	4	0	1-2	1-2	0-1	2-5

Appendix B: NeSA-AAM Test Blueprint

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 3						
NUMBER SENSE						
Gr3 Number System	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.1.1 Students will represent and show relationships among positive rational numbers within the base-ten number system.						
MA 3.1.1.e General Demonstrate multiple equivalent representations for numbers up to 10,000 Extended ***Identify representations of whole numbers 0-10***	3	0-1	0-1	0-2	0	1-3
MA 3.1.1.g General Compare and order whole numbers through the thousands Extended ***Compare and order whole numbers 0-10***	4	0	0-2	0-2	0-2	1-4
MA 3.1.1.h General Use visual models to represent fractions of halves, thirds, and fourths as parts of a whole and parts of a set Extended ***Use models to represent halves as parts of a whole and parts of a set***	3	0-1	1-2	0-1	0	1-4
MA 3.1.1.i General Round a given number to tens or hundreds Extended ***Recognize basic numerical concepts of closer and farther***	4	0	0-1	0-1	0-1	1-2
Gr3 Operations	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.1.2 Students will demonstrate the meaning of multiplication and division with whole numbers.						
MA 3.1.2.a General Represent multiplication as repeated addition using objects, drawings, words, and symbols Extended ***Represent a number up to 10 in equal sized groups***	4	0	0-1	0-2	0-1	1-3
MA 3.1.2.d General Use drawings, words, and symbols to explain the meaning of multiplication using an array Extended ***Use drawings, words, and symbols to explain the meaning of multiplication***	4	0-1	0-1	0-1	0-2	1-3
GEOMETRIC/MEASUREMENT CONCEPTS						
Gr3 Characteristics	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.2.1 Students will identify characteristics and describe properties of two dimensional shapes and three-dimensional objects.						

MA 3.2.1.a General Identify the number of sides, angles, and vertices of two-dimensional shapes Extended ***Identify two dimensional shapes (circle, square)***	3	0-1	0-1	0-2	0	1-2
Gr3 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.2.2 Students will identify distances on a number line.						
MA 3.2.2.b General Determine the distance between two whole number points on a number line Extended ***Identify a point on a number line***	3	0-1	0-1	0-2	0	1-2
Gr3 Measurement	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.2.5 Students will apply appropriate procedures and tools to determine measurements using customary and metric units.						
MA 3.2.5.e General Identify the appropriate customary unit for measuring length, weight, and capacity/volume Extended ***Identify the purpose of basic tools for measuring time***	3	0-1	0-1	0-1	0	1-2
MA 3.2.5.g General Compare and order objects according to length using centimeters and meters Extended ***Compare and order objects by length***	4	0	0	0-2	0-2	1-3
ALGEBRAIC CONCEPTS						
Gr3 Relationships	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.3.1 Students will represent relationships.						
MA 3.3.1.a General Identify, describe, and extend numeric and non-numeric patterns Extended ***Extend non-numeric AB patterns***	4	0	0-1	0-2	0-2	1-2
Gr3 Modeling in Context	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.3.2 Students will create and use models to represent mathematical situations.						
MA 3.3.2.a General Model situations that involve the addition and subtraction of whole numbers using objects, number lines, and symbols Extended ***Model situations that involve addition and subtraction of whole numbers 0-10 using objects and symbols***	4	0	0-2	0-3	0-2	1-3

Gr3 Procedures	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.3.3 Students will identify and apply properties of whole numbers to solve equations involving addition and subtraction.						
MA 3.3.3.b General Solve simple one-step whole number equations involving addition and subtraction Extended ***Solve simple one-step single digit equations involving addition and subtraction with sums and differences 0-9***	4	0	0	0-2	0-2	1-2
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr3 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 3.4.1 Students will organize, display, compare, and interpret data.						
MA 3.4.1.a General Represent data using horizontal and vertical bar graphs Extended ***Represent data using vertical bar graphs***	4	0	0-1	0-3	0-2	1-3
MA 3.4.1.c General Interpret data using horizontal and vertical bar graphs Extended ***Interpret data on vertical bar graphs***	4	0	0	0-2	0-2	1-3

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 4						
NUMBER SENSE						
Gr4 Number System	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.1.1 Students will represent and show relationships among positive rational numbers within the base-ten number system.						
MA 4.1.1.b General Demonstrate multiple equivalent representations for decimal numbers through the hundredths place Extended ***Identify representations of whole numbers from 0-20***	3	0-1	0-1	0-2	0	1-3
MA 4.1.1.c General Compare and order whole numbers and decimals through the hundredths place Extended ***Compare and order whole numbers 0-20***	4	0	0-2	0-2	0-2	1-4
MA 4.1.1.e General Represent a fraction as parts of a whole and/or parts of a set Extended ***Use models to represent halves and fourths as parts of a whole and parts of a set***	3	0-1	1-2	0-1	0	1-3
MA 4.1.1.f General Use visual models to find equivalent fractions Extended ***Use models to identify equivalent fractions 1/2 and whole***	3	0-1	0-1	0-1	0	1-2
Gr4 Operations	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.1.2 Students will demonstrate the meaning of division with whole numbers.						
MA 4.1.2.a General Use drawings, words, and symbols to explain the meaning of division Extended ***Represent a number up to 20 in equal sized groups***	4	0	0-1	0-2	0-2	1-2
Gr4 Computation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.1.2 Students will compute fluently and accurately using appropriate strategies and tools.						
MA 4.1.3.b General Add and subtract decimals to the hundredths place Extended ***Add and subtract single digit numbers***	4	0	0	0-2	0-2	1-2

MA 4.1.3.c General Multiply two-digit whole numbers Extended ***Add equal groups with sums up to 20***	4	0	0-1	0-2	0-1	1-2
MA 4.1.3.e General Mentally compute multiplication and division involving powers of 10 Extended ***Use groups of 10 for computation up to 50***	4	0	0-1	0-2	0-1	1-2
MA 4.1.3.f General Select and apply the appropriate method of computation when problem solving Extended ***Select the appropriate method of computation (addition and subtraction) when problem solving***	4	0	0	0-2	0-2	1-3
GEOMETRIC/MEASUREMENT CONCEPTS						
Gr4 Characteristics	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.2.1 Students will classify two-dimensional shapes and three- dimensional objects.						
MA 4.2.1.a General Identify two- and three- dimensional shapes according to their sides and angle properties Extended ***Identify two dimensional shapes (triangle, rectangle)***	3	0-1	0-1	0-2	0	1-2
MA 4.2.1.b General Classify an angle as acute, obtuse, or right Extended ***Identify the number of angles/corners of a given shape***	3	0	0-1	0-2	0	1-2
MA 4.2.1.c General Identify parallel, perpendicular, and intersecting lines Extended ***Recognize parallel and intersecting lines***	3	0-1	0-1	0-2	0	1-2
Gr4 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.2.2 Students will describe locations using coordinate geometry.						
MA 4.2.2.a General Identify the ordered pair of a plotted point in the first quadrant by its location Extended ***Determine the distance between two points on a number line***	3	0	0-1	0-2	0	1-2
Gr4 Measurement	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.2.5 Students will apply appropriate procedures and tools to estimate and determine measurements using customary and metric units.						
MA 4.2.5.b General Identify time to the minute on an analog clock Extended ***Identify time to the hour on an analog clock***	3	0	0-2	0-1	0	1-2

MA 4.2.5.c General Solve problems involving elapsed time Extended ***Solve problems involving elapsed time to the hour***	3	0	0-1	0-3	0	1-3
MA 4.2.5.d General Identify the appropriate metric unit for measuring length, weight, and capacity/volume Extended ***Determine the appropriate tool for measuring length, capacity/volume, and weight***	3	0-1	0-2	0-2	0	1-3
MA 4.2.5.g General Compute simple unit conversions for length within a system of measurement Extended ***Identify the length of an object using non-standard units***	3	0	0-2	0-2	0	1-2
ALGEBRAIC CONCEPTS						
Gr4 Relationships	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.3.1 Students will represent and analyze relationships.						
MA 4.3.1.c General Use symbols to compare quantities Extended ***Use objects and symbols (<, >, =) to compare quantities***	3	0-1	0-2	0-3	0	1-3
MA 4.3.1.d General Select appropriate operational and relational symbols to make a number sentence true Extended ***Select appropriate operational symbols (addition and subtraction) to make a number sentence true***	3	0-1	0-2	0-3	0	1-3
Gr4 Procedures	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.3.3 Students will identify and apply properties of whole numbers to solve equations involving multiplication and division.						
MA 4.3.3.c General Use symbolic representations of the commutative property of multiplication Extended ***Identify the commutative property of addition using pictures and models***	4	0	0-1	0-2	0-2	1-2
MA 4.3.3.d General Solve simple one-step whole number equations Extended ***Solve simple one-step single digit equations involving addition and subtraction with sums and differences 0-20***	4	0	0	0-2	0-2	1-2
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr4 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 4.4.1 Students will organize, display, compare, and interpret data.						

MA 4.4.1.b General Compare different representations of the same data Extended ***Compare different representations of the same data***	4	0	0-1	0-3	0-2	1-3
MA 4.4.1.c General Interpret data and draw conclusions using dot/line plots Extended ***Interpret data on vertical and horizontal bar graphs***	4	0	0	0-2	0-2	1-3

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 5						
NUMBER SENSE						
Gr5 Number System	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.1.1 Students will represent and show relationships among positive rational numbers.						
MA 5.1.1.a General Demonstrate multiple equivalent representations for whole numbers and decimal numbers through the thousandths place Extended ***Identify equivalent representations of whole numbers from 0-50***	3	0-1	0-1	0-2	0	1-3
MA 5.1.1.b General Compare and order whole numbers, fractions, and decimals through the thousandths place Extended ***Compare and order whole numbers 0-30***	4	0	0-2	0-2	0-2	1-4
MA 5.1.1.c General Identify and name fractions in their simplest form and find common denominators for fractions Extended ***Use models to represent halves, fourths, and thirds as parts of a whole and parts of a set***	3	0-1	1-2	0-2	0	1-3
MA 5.1.1.d General Recognize and generate equivalent forms of commonly used fractions, decimals, and percents Extended ***Use models to identify equivalent fractions 1/4, 1/2, and whole***	3	0-1	0-2	0-2	0	1-3
MA 5.1.1.e General Classify a number as prime or composite Extended ***Classify a number as even or odd***	3	0-1	0-2	0-2	0	1-3
MA 5.1.1.f General Identify factors and multiples of any whole number Extended ***Identify groups of 2, 5s, and 10s***	3	0-1	0-2	0-2	0	1-3
Gr5 Computation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.1.3 Students will compute fluently and accurately using appropriate strategies and tools.						
MA 5.1.3.a General Add and subtract positive rational numbers Extended ***Add and subtract 2-digit by 2-digit whole numbers without regrouping***	4	0	0	0-3	0-2	1-3
MA 5.1.3.b General Select, apply, and explain the appropriate method of computation when problem solving Extended ***Select the appropriate method of computation (addition, subtraction, and multiplication) when problem solving***	4	0	0	0-2	0-2	1-3

MA 5.1.3.c General Multiply decimals Extended ***Multiply single-digit numbers (0 to 5)***	4	0	0	0-3	0-2	1-3
MA 5.1.3.d General Divide a decimal by a whole number Extended ***Divide single digit numbers by single digit numbers resulting in a quotient that is a whole number***	4	0	0	0-3	0-2	1-3
Gr5 Estimation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.1.4 Students will estimate and check reasonableness of answers using appropriate strategies and tools.						
MA 5.1.4.a General Estimate the sums and differences of positive rational numbers to check the reasonableness of such results Extended ***Apply estimation to the nearest 10 on addition results***	4	0	0	0-3	0-2	1-3
GEOMETRIC/MEASUREMENT CONCEPTS						
Gr5 Characteristics	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.2.1 Students will describe relationships among two-dimensional shapes and three-dimensional objects.						
MA 5.2.1.a General Identify the number of edges, faces, and vertices of triangular and rectangular prisms Extended ***Identify the number of sides of a given polygon***	3	0	0-2	0-3	0	1-3
MA 5.2.1.d General Identify degrees on a circle Extended ***Identify the radius and diameter of a circle***	3	0-1	0-3	0-2	0	1-3
Gr5 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.2.2 Students will identify locations using coordinate geometry.						
MA 5.2.2.a General Plot the location of an ordered pair in the first quadrant Extended ***Determine the location of a number on a number line***	3	0	0-1	0-3	0	1-3
Gr5 Measurement	Highest DOK Stage Tested	DOK 1 Stage 1	DOK 1 Stage 2	DOK 1 Stage 3	DOK 2 Stage 4	**Stage**
MA 5.2.5 Students will apply appropriate procedures, tools and formulas to determine measurements using customary and metric units.						

MA 5.2.5.b General Identify correct unit (customary or metric) to the measurement situation Extended ***Identify the customary units for measuring length***	3	0	0-1	0-3	0	1-3
MA 5.2.5.f General Determine the area of rectangles and squares Extended ***Identify the perimeter of an object***	3	0	0-1	0-3	0	1-3
ALGEBRAIC CONCEPTS						
Gr5 Modeling in Context	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.3.2 Students will create, use, and compare models representing mathematical situations.						
MA 5.3.2.a General Model situations that involve the addition, subtraction, and multiplication of positive rational numbers using words, graphs, and tables Extended ***Model situations that involve addition and subtraction of numbers up to 50***	4	0	0	0-2	0-2	1-3
Gr5 Procedures	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.3.3 Students will apply properties of simple positive rational numbers to solve one-step equations.						
MA 5.3.3.b General Use symbolic representations of the associative property Extended ***Identify the associative property of addition using pictures and models***	4	0	0-1	0-3	0-2	1-3
MA 5.3.3.c General Evaluate numerical expressions by using parentheses with respect to order of operations Extended ***Demonstrate understanding of order of operations involving one- digit addition with parentheses***	4	0	0	0-2	0-3	1-3
MA 5.3.3.d General Evaluate simple algebraic expressions involving addition and subtraction Extended ***Evaluate simple algebraic expressions involving addition***	4	0	0	0-2	0-2	1-3
MA 5.3.3.e General Solve one-step addition and subtraction equations involving common positive rational numbers Extended ***Solve simple one-step equations involving addition***	4	0	0	0-1	1-3	1-3
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr5 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.4.1 Students will organize, display, compare, and interpret data.						
MA 5.4.1.a General Represent data using line graphs Extended ***Identify data on a line graph***	3	0-1	0-2	0-3	0	1-3

MA 5.4.1.b General Represent the same set of data in different formats Extended ***Identify the same data in different formats***	4	0	0	0	0-3	1-3
MA 5.4.1.c General Draw conclusions based on a set of data Extended ***Interpret data on a line graph***	4	0	0	0-2	0-3	1-3
GrS Probability	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 5.4.3 Students will organize, display, compare, and interpret data.						
MA5.4.3.b General Generate a list of possible outcomes for a simple event Extended ***Identify a possible outcome***	4	0	0-2	0-2	0-1	1-3

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 6						
NUMBER SENSE						
Gr6 Number System	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.1.1 Students will represent and show relationships among positive rational numbers and integers.						
MA 6.1.1.b General Compare and order positive and negative integers Extended ***Compare and order whole numbers up to 40***	4	0	0-2	0-2	0-2	1-4
MA 6.1.1.e General Identify the prime factorization of numbers Extended ***Identify factorization of a number up to 20***	4	0	0-2	0-2	0-2	1-3
Gr6 Operations	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.1.2 Students will demonstrate the meaning of arithmetic operations with positive fractions and decimals.						
MA 6.1.2.a General Use drawings, words, and symbols to explain the meaning of addition and subtraction of fractions Extended ***Use drawings to subtract halves, thirds, and fourths from a whole***	3	0	0-2	0-3	0	1-3
MA 6.1.2.b General Use drawings, words, and symbols to explain the meaning of addition and subtraction of decimals Extended ***Recognize decimal representation of money***	4	0-1	0-1	0-2	0-2	1-3
Gr6 Computation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.1.3 Students will compute fluently and accurately using appropriate strategies and tools.						
MA 6.1.3.a General Multiply and divide positive rational numbers Extended ***Multiply positive single digit numbers***	4	0	0	0-3	0-2	1-3
MA 6.1.3.b General Select and apply the appropriate method of computation when problem solving Extended ***Select the appropriate method of computation (addition, subtraction, multiplication, and division) when problem solving***	4	0	0	0-2	0-2	1-3

Gr6 Estimation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.1.4 Students will estimate and check reasonableness of answers using appropriate strategies and tools.						
MA 6.1.4.a General Use appropriate estimate methods to check the reasonableness of solutions for problems involving positive rational numbers Extended ***Apply estimation to the nearest 10 on addition and subtraction results***	4	0	0	0-3	0-2	1-3
GEOMETRIC/MEASUREMENT CONCEPTS						
Gr6 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.2.2 Students will identify locations using coordinate geometry.						
MA 6.2.2.a General Identify the ordered pair of a plotted point in the coordinate plane Extended ***Identify the plotted point on a 4 x 4 grid***	3	0	0-2	0-3	0	1-3
Gr6 Spatial Modeling	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.2.4 Students will use visualization of geometric models to solve problems.						
MA 6.2.4.a General Identify two-dimensional drawings of three-dimensional objects Extended ***Identify a two-dimensional shape and match it to a three- dimensional object***	3	0-1	0-1	0-3	0	1-3
Gr6 Measurement	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.2.5 Students will apply appropriate procedures, tools, and formulas to determine measurements.						
MA 6.2.5.d General Determine the perimeter of polygons Extended ***Determine the perimeter of polygons (triangle, rectangle, square)***	4	0	0	0-3	0-2	1-3
MA 6.2.5.e General Determine the area of parallelograms and triangles Extended ***Determine the area of a square***	4	0	0	0-3	0-2	1-3
ALGEBRAIC CONCEPTS						
Gr6 Relationships	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**

MA 6.3.1 Students will represent, analyze, and use relationships to make generalizations.						
MA 6.3.1.a General Describe and create simple algebraic expressions from words and tables Extended ***Match a simple algebraic expression involving addition to given tables***	4	0	0-1	0-2	0-3	1-3
MA 6.3.1.b General Use a variable to describe a situation with an equation Extended ***Use a symbol to represent a numeric value in a simple equation***	3	0	0-2	0-3	0	1-3
Gr6 Modeling in Context	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.3.2 Students will create, use, and interpret models of quantitative relationships.						
MA 6.3.2.a General Model contextualized problems using various representations Extended ***Model representations of coin combinations up to $1.00***	4	0	0-2	0-2	0-3	1-3
Gr6 Procedures	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.3.3 Students will apply properties to solve equations.						
MA 6.3.3.b General Evaluate numerical expressions containing multiple operations with respect to order of operations Extended ***Demonstrate understanding of order of operations involving one- digit addition, subtraction, and multiplication with parentheses with parentheses***	4	0	0	0-2	0-3	1-3
MA 6.3.3.c General Evaluate simple algebraic expressions involving multiplication and division Extended ***Evaluate simple algebraic expressions involving addition and subtraction***	4	0	0	0-2	0-2	1-3
MA 6.3.3.d General Solve one-step equations involving positive rational numbers Extended ***Solve simple one-step equations involving addition and subtraction***	4	0	0	0-2	0-2	1-3
MA 6.3.3.e General Identify and explain the properties of equality used in solving equations Extended ***Solve an addition problem demonstrating the commutative property of equality***	4	0	0-2	0-2	0-2	1-3
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr6 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.4.1 Students will organize, display, compare, and interpret data.						

MA 6.4.1.b General Compare and interpret data sets and their graphical representations Extended ***Interpret data on a circle graph***	4	0	0	0-2	0-3	1-3
MA 6.4.1.c General Find the mean, median, mode, and range for a set of data Extended ***Find the mode for a set of data***	4	0	0-1	0-2	0-2	1-3
Gr6 Probability	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 6.4.3 Students will apply basic concepts of probability.						
MA 6.4.3.b General Compute theoretical probabilities for independent events Extended ***Determine the theoretical probability of an event using given data***	4	0	0-2	0-2	0-2	1-3

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 7						
NUMBER SENSE						
Gr7 Number System	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.1.1 Students will represent and show relationships among rational numbers.						
MA 7.1.1.a General Show equivalence among fractions, decimals, and percents Extended ***Use models to identify equivalents between fractions and percents (1 and 100%, 1/2 and 50%, 1/4 and 25%)***	4	0-1	0-3	0-2	0-1	1-3
MA 7.1.1.b General Compare and order rational numbers (fractions, decimals, percents) Extended ***Compare and order numbers up to 50***	4	0	0-2	0-2	0-2	1-4
Gr7 Computation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.1.3 Students will compute fluently and accurately using appropriate strategies and tools.						
MA 7.1.3.a General Compute accurately with integers Extended ***Divide a positive two digit number by a single digit number***	4	0	0-1	0-3	0-2	1-3
MA 7.1.3.b General Select, apply, and explain the method of computation when problem solving using integers and positive rational numbers Extended ***Select and apply the appropriate method of computation (addition, subtraction, and multiplication) when problem solving***	4	0	0	0-2	0-2	1-3
MA 7.1.3.c General Solve problems involving percent of numbers Extended ***Compare given percents (greater than, less than, equal to)***	4	0	0-1	0-3	0-2	1-3
Gr7 Estimation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.1.4 Students will estimate and check reasonableness of answers using appropriate strategies and tools.						
MA 7.1.4.a General Use estimation methods to check the reasonableness of solutions for problems involving integers and positive rational numbers Extended ***Apply estimation to the nearest 10 on addition and subtraction results***	4	0	0	0-3	0-2	1-3
GEOMETRIC/MEASUREMENT CONCEPTS						

Gr7 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.2.2 Students will identify locations using coordinate geometry.						
MA 7.2.2.a General Plot the location of an ordered pair in the coordinate plane Extended ***Plot the location of an ordered pair on a 4 x 4 grid***	3	0	0-1	0-3	0	1-3
MA 7.2.2.c General Find the distance between points along horizontal and vertical lines of a coordinate plane Extended ***Identify the distance between two given points along horizontal and vertical lines of a grid***	3	0	0-1	0-3	0	1-3
Gr7 Transformations	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.2.3 Students will use transformations and symmetry to analyze geometric shapes.						
MA 7.2.3.b General Perform and describe positions and orientation of shapes under a single transformation on an coordinate plane Extended ***Identify congruent shapes***	3	0	0-2	0-2	0	1-3
Gr7 Measurement	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.2.5 Students will apply appropriate procedures, tools, and formulas to determine measurements.						
MA 7.2.5.b General Determine the area of trapezoids and circles, and the circumference of circles Extended ***Determine the area of a rectangle (not a square)***	4	0	0	0-3	0-2	1-3
ALGEBRAIC CONCEPTS						
Gr7 Relationships	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.3.1 Students will represent and analyze relationships using algebraic symbols.						
MA 7.3.1.a General Describe and create algebraic expressions from words, tables, and graphs Extended ***Match a simple algebraic expression involving addition and subtraction to a given table, chart, or illustration***	4	0	0-1	0-2	0-3	1-3
MA 7.3.1.b General Use a variable to describe a situation with an inequality Extended ***Identify a correct inequality***	4	0	0-1	0-2	0-3	1-3
Gr7 Modeling in Context	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**

MA 7.3.2 Students will create, use, and interpret models of quantitative relationships.						
MA 7.3.2.a General Model contextualized problems using various representations Extended ***Recognize addition number sentences using various representations***	3	0-1	0-1	0-3	0	1-3
Gr7 Procedures	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.3.3 Students will apply properties to solve equations and inequalities.						
MA 7.3.3.c General Given the value of the variable(s), evaluate algebraic expressions with respect to order of operations Extended ***Evaluate variable expressions with respect to order of operations in addition, subtraction, and multiplication with parentheses***	4	0	0	0-2	0-2	1-3
MA 7.3.3.d General Solve two-step equations involving integers and positive numbers Extended ***Solve one-step equations involving addition or subtraction***	4	0	0-1	0-3	0-1	1-3
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr7 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.4.1 Students will formulate questions that can be addressed with data, and then organize, display, and analyze the relevant data to answer their questions.						
MA 7.4.1.a General Analyze data sets and interest their graphical representations Extended ***Identify and interpret a data set***	4	0	0-2	0-3	0-2	1-3
MA 7.4.1.b General Find and interpret mean, median, mode, and range for a set of data Extended ***Find the median for a set of data***	4	0	0-1	0-2	0-2	1-3
Gr7 Probability	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 7.4.3 Students will apply and interpret basic concepts of probability.						
MA 7.4.3.a General Find the probability of independent compound events Extended ***Determine the probability of a given event (always, sometimes, never)***	3	0	0-1	0-3	0	1-3
MA 7.4.3.b General Compare and contracts theoretical and experimental probabilities Extended ***Compare theoretical probabilities***	4	0	0-1	0-2	0-2	1-3

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 8						
NUMBER SENSE						
Gr8 Number System	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.1.1 Students will represent and show relationships among real numbers.						
MA 8.1.1.a General Compare and order real numbers Extended ***Compare and order positive and negative integers (-50 to 50)***	4	0	0-2	0-3	0-2	1-4
MA 8.1.1.d General Classify numbers as natural, whole, integer, rational, irrational, or real Extended ***Classify numbers as natural or whole***	3	0-1	0-2	0-2	0	1-3
Gr8 Computation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.1.3 Students will compute fluently and accurately using appropriate strategies and tools.						
MA 8.1.3.a General Compute accurately with rational numbers Extended ***Add and subtract decimals without regrouping***	4	0	0-1	0-2	0-2	1-3
MA 8.1.3.b General Evaluate expressions involving absolute value of integers Extended ***Determine the absolute value of a given situation***	4	0	0-1	0-2	0-2	1-3
MA 8.1.3.d General Select, apply, and explain the method of computation when problem solving using rational numbers Extended ***Select and apply method of computation (addition, subtraction, multiplication, division) when problem solving***	4	0	0	0-2	0-2	1-3
MA 8.1.3.e General Solve problems involving ratios and proportions Extended ***Solve problems involving ratios***	4	0	0	0-3	0-2	1-3
Gr8 Estimation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.1.4 Students will estimate and check reasonableness of answers using appropriate strategies and tools.						
MA 8.1.4.a General Use estimation methods to check the reasonableness of solutions for problems involving rational numbers Extended ***Apply estimation to the nearest 10 on situations (story problems) involving addition and subtraction***	4	0	0	0-2	0-3	1-3

GEOMETRIC/MEASUREMENT CONCEPTS						
Gr8 Characteristics	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.2.1 Students will describe, compare, and contrast characteristics, properties, and relationships of geometric shapes and objects.						
MA 8.2.1.c General Identify geometric properties of parallel lines cut by a transversal and related angles Extended ***Identify geometric properties of parallel lines cut by a perpendicular transversal that creates right angles***	4	0-1	0-2	0-3	0-1	1-3
MA 8.2.1.d General Identify pairs of angles Extended ***Identify pairs of right angles***	4	0-1	0-2	0-3	0-1	1-3
MA 8.2.1.e General Examine the relationships of the interior angles to a triangle Extended ***Match congruent triangles based on interior angles***	3	0	0-2	0-2	0	1-3
Gr8 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.2.2 Students will specify locations and describe relationships using coordinate geometry.						
MA 8.2.2.a General Use coordinate geometry to represent and examine the properties of rectangles and squares using horizontal and vertical segments Extended ***Use coordinate geometry to determine the measurement of a side (rectangle, square)***	4	0	0-1	0-3	0-2	1-3
Gr8 Measurement	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.2.5 Students will apply appropriate procedures, tools, and formulas to determine measurements.						
MA 8.2.5.c General Apply the Pythagorean theorem to find missing lengths in right triangles and to solve problems Extended ***Find the missing length and/or height in a right triangle***	4	0	0-1	0-2	0-2	1-3
MA 8.2.5.d General Use scale factors to find missing lengths in similar shapes Extended ***Match similar geometric shapes represented in different scales***	3	0	0-3	0-3	0	1-3
ALGEBRAIC CONCEPTS						
Gr8 Relationships	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**

MA 8.3.1 Students will represent and analyze relationships using algebraic symbols.						
MA 8.3.1.b General Describe relationships using algebraic expressions, equations, and inequalities Extended ***Identify relationships using algebraic expressions***	3	0	0-2	0-3	0	1-3
Gr8 Modeling in Context	Highest Level DOK Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.3.2 Students will create, use, and interpret models of quantitative relationships.						
MA 8.3.2.a General Model contextualized problems using various representations Extended ***Recognize addition and subtraction number sentences using various representations***	3	0-1	0-1	0-3	0	1-3
Gr8 Procedures	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.3.3 Students will apply properties to solve equations and inequalities.						
MA 8.3.3.b General Evaluate numerical expressions containing whole number exponents Extended ***Identify representations of numbers squared***	3	0	0-2	0-2	0	1-3
MA 8.3.3.c General Solve multi-step equations involving rational numbers Extended ***Solve one-step equations involving addition, subtraction, and multiplication***	4	0	0-1	0-3	0-1	1-3
MA 8.3.3.d General Solve two-step inequalities involving rational numbers Extended ***Identify values that make inequalities true***	4	0	0-1	0-3	0-2	1-3
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr8 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.4.1 Students will formulate questions that can be addressed with data, and then organize, display, and analyze the relevant data to answer their questions.						
MA 8.4.1.b General Compare characteristics between sets of data or within a given set of data Extended ***Compare characteristics in a set of data***	4	0	0-2	0-3	0-2	1-3
MA 8.4.1.d General Select the most appropriate unit of central tendency for sets of data Extended ***Find the median for a set of data***	4	0	0-1	0-2	0-2	1-3

MA 8.4.1.e General Identify misrepresentation and misinterpretation of data represented in circle graphs and box plots Extended ***Recognize accurate representation of data in a circle graph***	4	0	0	0-3	0-2	1-3
Gr8 Probability	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 8.4.3 Students will apply and interpret basic concepts of probability.						
MA 8.4.3.a General Identify complementary events and calculate their probabilities Extended ***Determine complementary events***	3	0	0-1	0-3	0	1-3
MA 8.4.3.b General Compute probabilities for independent compound events Extended ***Determine the probability for an independent event***	4	0	0-1	0-2	0-2	1-3

Nebraska State Accountability - Alternate Assessment of Mathematics (NeSA-AAM) Tables of Specification						
Grade 11						
NUMBER SENSE						
Gr11 Computation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.1.3 Students will compute fluently and accurately using appropriate strategies and tools.						
MA 12.1.3.a General Compute accurately with real numbers Extended ***Add and subtract two-digit by two-digit numbers with regrouping***	4	0	0-1	0-2	0-2	1-3
MA 12.1.3.b General Simplify exponential expressions Extended ***Recognize expanded forms of exponents (powers)***	3	0-1	0-2	0-3	0	1-3
Gr11 Estimation	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.1.4 Students will estimate and check reasonableness of answers using appropriate strategies and tools.						
MA 12.1.4.a General Use estimation methods to check the reasonableness of real number computations and decide if the problem calls for an approximation or an exact number Extended ***Apply estimation to the nearest 10 on situations (story problems)involving addition, subtraction, and multiplication***	4	0	0	0-2	0-2	1-3
GEOMETRIC/MEASUREMENT CONCEPTS						
Gr11 Characteristics	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.2.1 Students will analyze characteristics, properties, and relationships among geometric shapes and objects.						
MA 12.2.1.d General Apply geometric properties to solve problems Extended ***Apply the geometric property, length times width, to find the area of a rectangle***	4	0	0-1	0-2	0-2	1-3
MA 12.2.1.e General Identify and apply right triangle relationships Extended ***Identify a right triangle***	3	0-1	0-1	0-3	0	1-3
Gr11 Coordinate Geometry	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**

MA 12.2.2 Students will use coordinate geometry to analyze and describe relationships in the coordinate plane.						
MA 12.2.2.a General Use coordinate geometry to analyze geometric situations Extended ***Determine the coordinates for a point on a 7 x 7 or larger grid***	3	0	0-1	0-3	0	1-3
MA 12.2.2.d General Prove special types of triangles and quadrilaterals Extended ***Identify the properties of equilateral triangles***	4	0-1	0-2	0-3	0-1	1-3
Gr11 Spatial Modeling	Highest Stage DOK Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.2.4 Students will use visualization, spatial reasoning, and geometric modeling to solve problems.						
MA 12.2.4.b General Use geometric models to visualize, describe, and solve problems Extended ***Use geometric models to solve problems***	4	0	0-1	0-3	0-1	1-3
Gr11 Measurement	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.2.5 Students will apply the units, systems, and formulas to solve problems.						
MA 12.2.5.c General Convert between various units of area and volume, such as square feet to square yards Extended ***Find the missing length and/or height in a right triangle***	4	0	0-1	0-2	0-2	1-3
MA 12.2.5.d General Convert equivalent rates Extended ***Convert equivalent rates using money***	4	0	0-1	0-3	0-2	1-3
ALGEBRAIC CONCEPTS						
Gr11 Relationships	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.3.1 Students will generalize, represent, and analyze relationships using algebraic symbols.						
MA 12.3.1.a General Represent, interpret, and analyze functions with graphs, tables, and algebraic notation, and convert among these representations Extended ***Interpret values of a function in a table***	4	0	0-1	0-2	0-2	1-3
MA 12.3.1.c General Identify the slope and intercepts of a linear relationship from an equation or graph Extended ***Identify a linear relationship from a graph***	4	0	0-1	0-3	0-2	1-3
MA 12.3.1.d General Identify characteristics of linear and non-linear functions Extended ***Compare linear and non-linear segments and graphs***	4	0-1	0-1	0-3	0-2	1-3

MA 12.3.1.f General Compare and analyze the rate of change by using ordered pairs, tables, graphs, and equations Extended ***Analyze the effect of the rate of change in a table or graph***	4	0	0-1	0-3	0-2	1-3
Gr11 Modeling in Context	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.3.2 Students will model and analyze quantitative relationships.						
MA 12.3.2.b General Represent a variety of quantitative relationships using linear equations and one variable inequalities Extended ***Solve the quantitative relationship of one variable inequalities using addition and subtraction***	4	0	0	0-3	0-3	1-3
DATA ANALYSIS/PROBABILITY CONCEPTS						
Gr11 Display and Analysis	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.4.1 Students will formulate a question and design a survey or an experiment in which data is collected and displayed in a variety of formats, then select and use appropriate statistical methods to analyze the data.						
MA 12.4.1.d General Describe the shape and determine the center, spread, and outliers of a data set Extended ***Determine the range of a data set***	4	0	0	0-3	0-3	1-3
Gr11 Probability	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	**Item Totals**
MA 12.4.3 Students will apply and interpret concepts of probability.						
MA 12.4.3.b General Identify dependent and independent events and calculate their probabilities Extended ***Differentiate between a dependent and independent event***	4	0	0-1	0-3	0-3	1-3
MA 12.4.3.c General Use the appropriate counting techniques to determine the probability of an event Extended ***Use the appropriate counting principle to determine the combinations for an event***	4	0	0-1	0-3	0-3	1-3
MA 12.4.3.d General Analyze events to determine if they are mutually exclusive Extended ***Determine if two events are mutually exclusive***	4	0	0-1	0-3	0-3	1-3

Appendix C: NeSA-AAS Test Blueprint

Nebraska State Accountability - Alternate Assessment of Science (NeSA-AAS) Tables of Specification						
Grade 5						
Inquiry, The Nature of Science, and Technology						
Grade 5 Abilities to do Scientific Inquiry	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.1.1 General Students will plan and conduct investigations that lead to the development of explanations. **Extended *Students will conduct investigations that lead to a final product.***	**4**	**0-1**	**0-1**	**2-5**	**1-4**	**4-7**
SC 5.1.1.a Ask testable scientific questions	4					
SC 5.1.1.b Plan and conduct investigations and identify factors that have the potential to impact an investigation	4					
SC 5.1.1.c Select and use equipment correctly and accurately	4					
SC 5.1.1.d Make relevant observations and measurements	4					
SC 5.1.1.e Collect and organize data	4					
SC 5.1.1.f Develop a reasonable explanation based on collected data	4					
SC 5.1.1.g Share information, procedures, and results with peers and/or adults	4					
SC 5.1.1.h Provide feedback on scientific investigations	4					
SC 5.1.1.i Use appropriate mathematics in all aspects of scientific inquiry	4					
Grade 5 Nature of Science	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.1.2 General Students will describe how scientists go about their work. **Extended *Students will observe how scientists go about their work.***	**Assessed at the local level**					
SC 5.1.2.a Recognize that scientific explanations are based on evidence and scientific knowledge						
SC 5.1.2.b Recognize that new discoveries are always being made which impact scientific knowledge						
SC 5.1.2.c Recognize many different people study science						

Grade 5 Technology	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	Item Total
SC 5.1.3 General Students will solve a simple design problem. **Extended *Students will solve a simple problem.***	**Assessed at the local level**					
SC 5.1.3.a Identify a simple problem						
SC 5.1.3.b Propose a solution to a simple problem						
SC 5.1.3.c Implement the proposed solution						
SC 5.1.3.d Evaluate the implementation						
SC 5.1.3.e Communicate the problem, design, and solution						
PHYSICAL SCIENCE						
Grade 5 Matter	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.2.1 General Students will explore and describe the physical properties of matter and its changes. **Extended *Students will explore and recognize the physical properties of matter and its changes.***	4	0-1	0-1	1-4	0-3	**2-4**
SC 5.2.1.a Identify mixtures and pure substances	4					
SC 5.2.1.b Identify physical properties of matter (color, odor, elasticity, weight, volume)	4					
SC 5.2.1.c Use appropriate metric measurements to describe physical properties	4					
SC 5.2.1.d Identify state change caused by heating and cooling solids, liquids, and gasses	4					
Grade 5 Force and Motion	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.2.2 General Students will identify the influence of forces on motion. **Extended *Students will identify the influence of forces on motion.***	4	0-1	0-1	1-3	0-2	**2-3**
SC 5.2.2.a Describe motion by tracing and measuring an object's position over a period of time (speed)	4					
SC 5.2.2.b Describe changes in motion due to outside forces (push, pull, gravity)	4					
SC 5.2.2 c Describe magnetic behavior in terms of attraction and repulsion	4					

Grade 5 Energy	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	Item Total
SCE 5.2.3 General Students will observe and identify signs of energy transfer. **Extended** ***Students will observe and identify signs of energy transfer.***	4	0-1	0-1	1-3	0-2	**2-3**
SC 5.2.3.a Recognize that sound is produced from vibrating objects; the sound can be changed by changing the vibration	4					
SC 5.2.3.b Recognize that light travels in a straight line and can be reflected by an object (mirror)	4					
SC 5.2.3.c Recognize that light can travel through certain materials and not others (transparent, translucent, opaque)	4					
SC 5.2.3.d Identify ways to generate heat (friction, burning, incandescent light bulb)	4					
SC 5.2.3.e Identify materials that act as thermal conductors or insulators	4					
SC 5.2.3.f Recognize that the transfer of electricity in an electrical circuit requires a closed loop	4					
LIFE SCIENCE						
Grade 5 Life Science	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.3.1 General Students will investigate and compare the characteristics of living things. **Extended** ***Students will recognize that living things grow.***	4	0-1	0-1	1-3	0-2	**2-3**
SC 5.3.1.a Compare and contrast characteristics of living and nonliving things	4					
SC 5.3.1.b Identify how parts of plants and animals function to meet basic needs (e.g., leg of an insect helps an insect move, root of a plant helps the plant obtain water)	4					
Grade 5 Heredity	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.3.2 General Students will identify variations of inherited characteristics and life cycles. **Extended** ***Students will observe inherited characteristics and life cycles.***	4	0-1	0-2	1-3	0-2	**1-3**
SC 5.3.2.a Identify inherited characteristics of plants and animals	4					
SC 5.3.2.b Identify the life cycle of an organism	4					

SCE 5.3.3 General Students will describe relationships within an ecosystem. **Extended** ***Students will recognize relationships within an ecosystem.***	4	0-1	0-2	0-3	0-2	**2-3**
SC 5.3.3.a Diagram and explain a simple food chain beginning with the Sun	4					
SC 5.3.3.b Identify the role of producers, consumers, and decomposers in an ecosystem	4					
SC 5.3.3.c Recognize the living and nonliving factors that impact the survival of organisms in an ecosystem	4					
SC 5.3.3.d Recognize all organisms cause changes, some beneficial and some detrimental, in the environment where they live	4					
SCE 5.3.4 General Students will describe changes in organisms over time. **Extended** ***Students will identify changes in organisms over time.***	4	0-1	0-1	1-2	0-1	**1-2**
SC 5.3.4.a Describe adaptations made by plants or animals to survive environmental changes	4					
EARTH AND SPACE SCIENCE						
Grade 5 Earth in Space	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.4.1 General Students will observe and describe characteristics, patterns, and changes in the sky. **Extended** ***Students will observe and recognize changes in the sky.***		0-1	0-1	1-3	0-2	**1-3**
SC 5.4.1.a Recognize that the observed shape of the Moon changes from day to day during a one month period	4					
SC 5.4.1.b Recognize the motion of objects in the sky (the Sun, the Moon, stars) change over time in recognizable patterns	4					

Grade 5 Earth Structures and Processes	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	Item Total
SCE 5.4.2 General Students will observe and describe Earth's materials, structure, and processes. **Extended** ***Students will observe and recognize Earth's materials and processes.***	4	0-1	0-2	1-4	0-2	**2-4**
SC 5.4.2.a Describe the characteristics of rocks, minerals, soil, water, and the atmosphere	4					
SC 5.4.2.b Identify weathering, erosion, and deposition as processes that build up or break down Earth's surface	4					
SC 5.4.2.c Identify how Earth materials are used (fuels, building materials, sustaining plant life)	4					
Grade 5 Energy in Earth's Systems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.4.3 General Students will observe and describe the effects of energy changes on Earth. **Extended** ***Students will observe and recognize the effects of energy changes on Earth.***	4	0-1	0-1	1-3	0-2	**2-3**
SC 5.4.3.a Describe the Sun's warming effect on the land and water	4					
SC 5.4.3.b Observe, measure, and record changes in weather (temperature, wind direction and speed, precipitation)	4					
SC 5.4.3.c Recognize the difference between weather, climate, and seasons	4					
Grade 5 Earth's History	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 5.4.4 General Students will describe changes in Earth. **Extended** ***Students will recognize changes occur on Earth.***	**4**	**0-1**	**0-1**	**1-3**	**0-2**	**1-3**
SC 5.4.4.a Describe how slow processes (erosion, weathering, deposition) and rapid processes (landslides, volcanic eruptions, earthquakes) change Earth's surface	4					

Nebraska State Accountability - Alternate Assessment of Science (NeSA-AAS) Tables of Specification						
Grade 8						
Inquiry, The Nature of Science, and Technology						
Grade 8 Abilities to do Scientific Inquiry	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.1.1 General Students will design and conduct investigations that will lead to descriptions of relationships between evidence and explanations. **Extended** ***Students will conduct investigations that lead to a final product.***		**0-1**	**0-1**	**2-5**	**1-4**	**4-7**
SC 8.1.1.a Formulate testable questions that lead to predictions and scientific investigations	4					
SC 8.1.1.b Design and conduct logical and sequential investigations including repeated trials	4					
SC 8.1.1.c Determine controls and use dependent (responding) and independent (manipulated) variables	4					
SC 8.1.1.d Select and use equipment appropriate to the investigation, demonstrate correct techniques	4					
SC 8.1.1.e Make qualitative and quantitative observations	4					
SC 8.1.1.f Record and represent data appropriately and review for quality, accuracy, and relevancy	4					
SC 8.1.1.g Evaluate predictions, draw logical inferences based on observed patterns/relationships, and account for non-relevant information	4					
SC 8.1.1.h Share information, procedures, results, and conclusions with appropriate audiences	4					
SC 8.1.1.i Analyze and provide appropriate critique of scientific investigations	4					
SC 8.1.1.j Use appropriate mathematics in all aspects of scientific inquiry	4					
Grade 8 Nature of Science	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.1.2 General Students will apply the nature of science to their own investigations. **Extended** ***Students will describe how scientists go about their work.***	**Assessed at the local level**					

SC 8.1.2.a Recognize science is an ongoing process and the scientific community accepts and uses explanations until they encounter new experimental evidence not matching existing explanations						
SC 8.1.2.b Describe how scientific discoveries influence and change society						
SC 8.1.2.c Recognize scientists from various cultures have made many contributions to explain the natural world						
Grade 8 Technology	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.1.3 General Students will solve a design problem which involves one or two science concepts. **Extended *Students will solve a problem using simple machines (inclined planes and wheels).***	**Assessed at the local level**					
SC 8.1.3.a Identify problems for technical design						
SC 8.1.3.b Design a solution or product						
SC 8.1.3.c Implement the proposed design						
SC 8.1.3.d Evaluate completed technological designs or products						
SC 8.1.3.e Communicate the process of technical design						
SC 8.1.3.f Distinguish between scientific inquiry (asking questions about the natural world) and technological design (using science to solve practical problems)						
SC 8.1.3.g Describe how science and technology are reciprocal						
SC 8.1.3.h Recognize that solutions have intended and unintended consequences						
SC 8.1.3.i Compare and contrast the reporting of scientific knowledge and the reporting of technological knowledge						
PHYSICAL SCIENCE						
Grade 8 Matter	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.2.1 General Students will identify and describe the particulate nature of matter including physical and chemical interactions. **Extended *Students will explore and identify the physical properties and the physical changes of matter.***		0-1	0-1	2-4	0-3	**2-4**
SC 8.2.1.a Compare and contrast elements, compounds, and mixtures	4					
SC 8.2.1.b Describe physical and chemical properties of matter	4					

SC 8.2.1.c Recognize most substances can exist as a solid, liquid, or gas depending on temperature	4					
SC 8.2.1.d Compare and contrast solids, liquids, and gasses based on properties of these states of matter	4					
SC 8.2.1.e Distinguish between physical and chemical changes (phase changes, dissolving, burning, rusting)	4					
SC 8.2.1.f Recognize conservation of matter in physical and chemical changes	4					
SC 8.2.1.g Classify substances into similar groups based on physical properties	4					
Grade 8 Force and Motion	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.2.2 General Students will investigate and describe forces and motion. **Extended** ***Students will explore and recognize forces and motion.***		0-1	0-1	1-3	0-2	**2-3**
SC 8.2.2.a Describe motion of an object by its position and velocity	4					
SC 8.2.2.b Recognize an object that is not being subjected to a force will continue to move at a constant speed in a straight line or stay at rest (Newton's 1st law)	4					
SC 8.2.2.c Compare the motion of objects related to the effects of balanced and unbalanced forces	4					
SC 8.2.2.d Recognize that everything on or around Earth is pulled towards Earth's center by gravitational force	4					
Grade 8 Energy	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.2.3 General Students will identify and describe how energy systems and matter interact. **Extended** ***Students will identify and describe how energy systems and matter interact.***		0-1	0-1	1-3	0-2	**2-3**
SC 8.2.3.a Recognize that vibrations set up wave-like disturbances that spread away from the source (sound, seismic, water waves)	4					
SC 8.2.3.b Identify that waves move at different speeds in different materials	4					
SC 8.2.3.c Recognize that light interacts with matter by transmission (including refraction), absorption, or scattering (including reflection)	4					
SC 8.2.3.d Recognize that to see an object, light from the surface of the object must enter the eye; the color seen depends on the properties of the surface and the color of the available light sources	4					

SC 8.2.3.e Recognize that heat moves from warmer objects to cooler objects until both reach the same temperature	4					
SC 8.2.3.f Describe transfer of energy from electrical and magnetic sources to different energy forms (heat, light, sound, chemical)	4					
SC 8.2.3.g Recognize all energy is neither created nor destroyed	4					
LIFE SCIENCE						
Grade 8 Structure and Function of Living Systems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.3.1 General Students will investigate and describe the structure and function of living organisms. **Extended** ***Students will explore and identify the structure and function of living things.***		0-1	0-2	1-3	0-2	**2-3**
SC 8.3.1.a Recognize the levels of organization in living organisms (cells, tissues, organs, organ systems, organisms)	4					
SC 8.3.1.b Recognize that all organisms are composed of one or many cells; that these cells must grow, divide, and use energy; and that all cells function similarly	4					
SC 8.3.1.c Recognize specialized cells perform specialized functions in multicellular organisms	4					
SC 8.3.1.d Identify the organs and functions of the major systems of the human body and describe ways that these systems interact with each other	4					
SC 8.3.1.e Describe how plants and animals respond to environmental stimuli	4					
Grade 8 Heredity	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.3.2 General Students will investigate and describe the relationship between reproduction and heredity. **Extended** ***Students will explore and identify the relationship between reproduction and heredity.***		0-1	0-1	1-3	0-2	**1-3**
SC 8.3.2.a Recognize that hereditary information is contained in genes within the chromosomes of each cell	4					
SC 8.3.2.b Compare and contrast sexual and asexual reproduction	4					
Grade 8 Flow of Matter and Energy in Ecosystems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**

SCE 8.3.3 General Students will describe populations and ecosystems. **Extended** ***Students will recognize relationships within an ecosystem.***		0-1	0-1	0-3	0-2	**2-3**
SC 8.3.3.a Diagram and explain the flow of energy through a simple food web	4					
SC 8.3.3.b Compare the roles of producers, consumers, and decomposers in an ecosystem	4					
SC 8.3.3.c Recognize that producers transform sunlight into chemical energy through photosynthesis	4					
SC 8.3.3.d Determine the biotic and abiotic factors that impact the number of organisms an ecosystem can support	4					
SC 8.3.3.e Recognize a population is all the individuals of a species at a given place and time	4					
SC 8.3.3.f Identify symbiotic relationships among organisms	4					
SC 8.3.3.g Identify positive and negative effects of natural and human activity on an ecosystem	4					
Grade 8 Biodiversity	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.3.4 General Students will identify characteristics of organisms that help them survive. **Extended** ***Students will identify survival characteristics or organisms.***		0-1	0-1	1-2	0-1	**1-2**
SC 8.3.4.a Describe how an inherited characteristic enables an organism to improve its survival rate	4					
SC 8.3.4.b Recognize the extinction of a species is caused by the inability to adapt to an environmental change	4					
SC 8.3.4.c Use anatomical features of an organism to infer similarities among other organisms	4					
EARTH AND SPACE SCIENCE						
Grade 8 Earth in Space	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.4.1 General Students will investigate and describe Earth and the solar system. **Extended** ***Students will investigate Earth and the solar system.***		0-1	0-1	1-2	0-2	**1-2**
SC 8.4.1.a Describe the components of the solar system (the Sun, planets, moons, asteroids, comets)	4					
SC 8.4.1.b Describe the relationship between motion of objects in the solar system and the phenomena of day, year, eclipses, phases of the Moon and seasons	4					

SC 8.4.1.c Describe the effects of gravity on Earth (tides) and the effect of gravity on objects in the solar system	4					
Grade 8 Earth Structures and Processes	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.4.2 General Students will investigate and describe Earth's structure, systems, and processes. **Extended** ***Students will investigate and identify Earth's structure, systems, and processes.***		0-1	0-2	1-4	0-2	**2-4**
SC 8.4.2.a Describe the layers of Earth (core, mantle, crust, atmosphere)	4					
SC 8.4.2.b Describe the physical composition of soil	4					
SC 8.4.2.c Describe the mixture of gasses in Earth's atmosphere and how the atmosphere's properties change at different elevations	4					
SC 8.4.2.d Describe evidence of Earth's magnetic field	4					
SC 8.4.2.e Compare and contrast constructive and destructive forces (deposition, erosion, weathering, plate motion causing uplift, volcanoes, earthquakes) that impact Earth's surface	4					
SC 8.4.2.f Describe the rock cycle	4					
SC 8.4.2.g Describe the water cycle (evaporation, condensation, precipitation)	4					
SC 8.4.2.h Classify Earth materials as renewable or nonrenewable	4					
Grade 8 Energy in Earth's Systems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 8.4.3 General Students will investigate and describe energy in Earth's systems. **Extended** ***Students will identify energy in Earth's systems.***		0-1	0-1	1-3	0-2	**2-3**
SC 8.4.3.a Describe how energy from the Sun influences the atmosphere and provides energy for plant growth	4					
SC 8.4.3.b Identify factors that influence daily and seasonal changes on Earth (tilt of the Earth, humidity, air pressure, air masses)	4					
SC 8.4.3.c Describe atmospheric movements that influence weather and climate (air masses, jet stream)	4					
Grade 8 Earth's History	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**

SCE 8.4.4 General Students will use evidence to draw conclusions about changes in Earth. **Extended** ***Students will recognize that the surface of Earth changes today, in similar ways as in the past.***		0-1	0-1	1-3	0-2	**1-3**
SC 8.4.4.a Recognize that Earth processes we see today are similar to those that occurred in the past (uniformity of processes)	4					
SC 8.4.4.b Describe how environmental conditions have changed through use of the fossil record	4					

Nebraska State Accountability - Alternate Assessment of Science (NeSA-AAS) Tables of Specification						
Grade 11						
Inquiry, The Nature of Science, and Technology						
Grade 11 Abilities to do Scientific Inquiry	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.1.1 General Students will design and conduct investigations that lead to the use of logic and evidence in the formulation of scientific explanations and models. **Extended** ***Students will conduct an investigation that leads to an answer.***		**0-1**	**0-1**	**2-5**	**2-4**	**4-7**
SC 12.1.1.a Formulate a testable hypothesis supported by prior knowledge to guide an investigation	4					
SC 12.1.1.b Design and conduct logical and sequential scientific investigations with repeated trials and apply findings to new investigations	4					
SC 12.1.1.c Identify and manage variables and constraints	4					
SC 12.1.1.d Select and use lab equipment and technology appropriately and accurately	4					
SC 12.1.1.e Use tools and technology to make detailed qualitative and quantitative observations	4					
SC 12.1.1.f Represent and review collected data in a systematic, accurate, and objective manner	4					
SC 12.1.1.g Analyze and interpret data, synthesize ideas, formulate and evaluate models, and clarify concepts and explanations	4					
SC 12.1.1.h Use results to verify or refute a hypothesis	4					
SC 12.1.1.i Propose and/or evaluate possible revisions and alternate explanations	4					
SC 12.1.1.j Share information, procedures, results, conclusions, and defend findings to a scientific community (peers, science fair audience, policy makers)	4					
SC 12.1.1.k Evaluate scientific investigations and offer revisions and new ideas as appropriate	4					
SC 12.1.1.l Use appropriate mathematics in all aspects of scientific inquiry	4					

Grade 11 Nature of Science	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	Item Total
SCE 12.1.2 General Students will apply the nature of scientific knowledge to their own investigations and in the evaluation of scientific explanations. **Extended** ***Students will apply the nature of science investigations to the world in which they live.***	**Assessed at the local level**					
SC 12.1.2.a Recognize that scientific explanations must be open to questions, possible modifications, and must be based upon historical and current scientific knowledge						
SC 12.1.2.b Describe how society influences the work of scientists and how science, technology, and current scientific discoveries influence and change society						
SC 12.1.2.c Recognize that the work of science results in incremental advances, almost always building on prior knowledge, in our understanding of the world						
SC 12.1.2.d Research and describe the difficulties experienced by scientific innovators who had to overcome commonly held beliefs of their times to reach conclusions that we now take for granted						
Grade 11 Technology	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.1.3 General Students will solve a complex design problem. **Extended** ***Students will solve a design problem.***	**Assessed at the local level**					
SC 12.1.3.a Propose designs and choose between alternative solutions of a problem						
SC 12.1.3.b Assess the limits of a technological design						
SC 12.1.3.c Implement the selected solution						
SC 12.1.3.d Evaluate the solution and its consequences						
SC 12.1.3.e Communicate the problem, process, and solution						
SC 12.1.3.f Compare and contrast the reasons for the pursuit of science and the pursuit of technology						
SC 12.1.3.g Explain how science advances with the introduction of new technology						
SC 12.1.3.h Recognize creativity, imagination, and a good knowledge base are all needed to advance the work of science and engineering						

PHYSICAL SCIENCE						
Grade 11 Matter	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.2.1 General Students will investigate and describe matter in terms of its structure, composition and conservation. **Extended** ***Students will identify changes that take place between states of matter.***		0-1	0-1	2-4	0-3	**2-4**
SC 12.2.1.a Recognize bonding occurs when outer electrons are transferred (ionic) or shared (covalent)	4					
SC 12.2.1.b Describe the energy transfer associated with phase changes between solids, liquids, and gasses	4					
SC 12.2.1.c Describe the three normal states of matter (solid, liquid, gas) in terms of energy, particle arrangement, particle motion, and strength of bond between molecules	4					
SC 12.2.1.d Recognize a large number of chemical reactions involve the transfer of either electrons (oxidation/reduction) or hydrogen ions (acid/base) between reacting ions, molecules, or atoms	4					
SC 12.2.1.e Identify factors affecting rates of chemical reactions (temperature, particle size, surface area)	4					
SC 12.2.1.f Recognize the charges and relative locations of subatomic particles (neutrons, protons, electrons)	4					
SC 12.2.1.g Describe properties of atoms, ions, and isotopes	4					
SC 12.2.1.h Describe the organization of the periodic table of elements with respect to patterns of physical and chemical properties	4					
Grade 11 Force and Motion	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.2.2 General Students will investigate and describe the nature of field forces and their interactions with matter. **Extended** ***Students will investigate and identify how forces interact with matter.***		0-1	0-1	1-3	0-2	**2-3**
SC 12.2.2.a Describe motion with respect to displacement and acceleration	4					
SC 12.2.2.b Describe how the law of inertia (Newton's 1st law) is evident in a real-world event	4					
SC 12.2.2.c Make predictions based on relationships among net force, mass, and acceleration (Newton's 2nd law)	4					
SC 12.2.2.d Recognize that all forces occur in equal and opposite pairs (Newton's 3rd law)	4					

SC 12.2.e Describe how Newton's 3rd law of motion is evident in a real-world event	4					
SC 12.2.2.f Describe gravity as a force that each mass exerts on another mass, which is proportional to the masses and the distance between them	4					
SC 12.2.2.g Recognize that an attractive or repulsive electric force exists between two charged particles and that this force is proportional to the magnitude of the charges and the distance between them	4					
Grade 11 Energy	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.2.3 General Students will describe and investigate energy systems relating to the conservation and interaction of energy and matter. **Extended** ***Students will investigate and recognize the effects of energy transfer.***		0-1	0-1	1-3	0-2	**2-3**
SC 12.2.3.a Describe mechanical wave properties (speed, wavelength, frequency, amplitude) and how waves travel through a medium	4					
SC 12.2.3.b. Recognize that the energy in waves can be changed into other forms of energy	4					
SC 12.2.3.c Recognize that light can behave as a wave (diffraction and interference)	4					
SC 12.2.3.d Distinguish between temperature (a measure of the average kinetic energy of atomic or molecular motion) and heat (the quantity of thermal energy that transfers due to a change in temperature)	4					
SC 12.2.3.e Compare and contrast methods of heat transfer and the interaction of heat with matter via conduction, convection, and radiation	4					
SC 12.2.3.f Recognize that the production of electromagnetic waves is a result of changes in the motion of charges or by a changing magnetic field	4					
SC 12.2.3.g Compare and contrast segments of the electromagnetic spectrum (radio, micro, infrared, visible, ultraviolet, x-rays, gamma) based on frequency and wavelength	4					
SC 12.2.3.h Recognize that nuclear reactions (fission, fusion, radioactive decay) convert a fraction of the mass of interacting particles into energy, and this amount of energy is much greater than the energy in chemical interactions	4					
SC 12.2.3.i Interpret the law of conservation of energy to make predictions for the outcome of an event	4					
SC 12.2.3.j Identify that all energy can be considered to be either kinetic, potential, or energy contained by a field (e.g. electromagnetic waves)	4					
SC 12.2.3.k Identify endothermic and exothermic reactions	4					

LIFE SCIENCE						
Grade 11 Structure and Function of Living Systems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.3.1 General Students will investigate and describe the chemical basis of the growth, development, and maintenance of cells. **Extended** ***Students will investigate and identify the factors needed for life and growth.***		0-1	0-1	1-3	0-2	**2-3**
SC 12.3.1.a Identify the complex molecules (carbohydrates, lipids, proteins, nucleic acids) that make up living organisms	4					
SC 12.3.1.b Identify the form and function of sub-cellular structures that regulate cellular activities	4					
SC 12.3.1.c Describe the cellular functions of photosynthesis, respiration, cell division, protein synthesis, transport of materials, and energy capture/release	4					
SC 12.3.1.d Describe how an organism senses changes in its internal or external environment and responds to ensure survival	4					
Grade 11 Heredity	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.3.2 General Students will describe the molecular basis of reproduction and heredity. **Extended** ***Students will investigate and identify features of living organisms that come from their parents.***		0-1	0-1	1-3	0-2	**1-3**
SC 12.3.2.a Identify that information passed from parents to offspring is coded in DNA molecules	4					
SC 12.3.2.b Describe the basic structure of DNA and its function in genetic inheritance	4					
SC 12.3.2.c Recognize how mutations could help, harm, or have no effect on individual organisms	4					
SC 12.3.2.d Describe that sexual reproduction results in a largely predictable, variety of possible gene combinations in the offspring of any two parents	4					
Grade 11 Flow of Matter and Energy in Ecosystems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.3.3 General Students will describe, on a molecular level, the cycling of matter and the flow of energy between organisms and their environment. **Extended** ***Students will investigate and identify the cycling of matter between organisms and their environment.***		0-1	0-1	1-3	0-2	**2-3**
SC 12.3.3.a Explain how the stability of an ecosystem is increased by biological diversity	4					

SC 12.3.3.b Recognize that atoms and molecules cycle among living and nonliving components of the biosphere	4					
SC 12.3.3.c Explain how distribution and abundance of different organisms in ecosystems are limited by the availability of matter and energy and the ability of the ecosystem to recycle materials	4					
SC 12.3.3.d Analyze factors which may influence environmental quality	4					
Grade 11 Biodiversity	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.3.4 General Students will describe the theory of biological evolution. **Extended** ***Students will explore and identify elements of evolution.***		0-1	0-1	0-2	0-2	**1-2**
SC 12.3.4.a Identify different types of adaptations necessary for survival (morphological, physiological, behavioral)	4					
SC 12.3.4.b Recognize that the concept of biological evolution is a theory which explains the consequence of the interactions of: (1) the potential for a species to increase its numbers, (2) the genetic variability of offspring due to mutation and recombination of genes, (3) a finite supply of the resources required for life, and (4) the ensuing selection by the environment of those offspring better able to survive and leave offspring	4					
SC 12.3.4.c Explain how natural selection provides a scientific explanation of the fossil record and the molecular similarities among the diverse species of living organisms	4					
SC 12.3.4.d Apply the theory of biological evolution to explain diversity of life over time	4					
EARTH AND SPACE SCIENCE						
Grade 11 Earth in Space	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.4.1 General Students will investigate and describe the known universe. **Extended** ***Students will identify the difference between man-made and natural objects in space.***		0-1	0-1	1-3	0-2	**2-3**
SC 12.4.1.a Describe the formation of the universe using the Big Bang Theory	4					
SC 12.4.1.b Recognize that stars, like the Sun, transform matter into energy by nuclear reactions which leads to the formation of other elements	4					
SC 12.4.1.c Describe stellar evolution	4					

Grade 11 Earth Structures and Processes	Highest DOK Stage Tested	Stage 1	Stage 2	Stage 3	Stage 4	Item Total
SCE 12.4.2 General Students will investigate the relationships among Earth's structure, systems, and processes. **Extended** ***Students will recognize that various processes cause changes on Earth.***		0-1	0-1	1-4	0-2	**2-4**
SC 12.4.2.a Recognize how Earth materials move through geochemical cycles (carbon, nitrogen, oxygen) resulting in chemical and physical changes in matter	4					
SC 12.4.2.b Describe how heat convection in the mantle propels the plates comprising Earth's surface across the face of the globe (plate tectonics)	4					
SC 12.4.2.c Evaluate the impact of human activity and natural causes on Earth's resources (groundwater, rivers, land, fossil fuels)	4					
Grade 11 Energy in Earth's Systems	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.4.3 General Students will investigate and describe the relationships among the sources of energy and their efforts on Earth's systems. **Extended** ***Students will identify sources of energy in Earth's systems.***		0-1	0-1	1-3	0-2	**2-3**
SC 12.4.3.a Describe how radiation, conduction, and convection transfer heat in Earth's systems	4					
SC 12.4.3.b Identify internal and external sources of heat energy in Earth's systems	4					
SC 12.4.3.c Compare and contrast benefits of renewable and nonrenewable energy sources	4					
SC 12.4.3.d Describe natural influences (Earth's rotation, mountain ranges, oceans, differential heating) on global climate	4					
Grade 11 Earth's History	**Highest DOK Stage Tested**	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Item Total**
SCE 12.4.4 General Students will explain the history and evolution of Earth. **Extended** ***Students will identify changes in Earth over time.***		**0-1**	**0-1**	**1-3**	**0-2**	**1-3**
SC 12.4.4.a Recognize that in any sequence of sediments or rocks that has not been overturned, the youngest sediments or rocks are at the top of the sequence and the oldest are at the bottom (law of superposition)	4					
SC 12.4.4.b Interpret Earth's history by observing rock sequences, using fossils to correlate the sequences at various locations, and using data from radioactive dating methods	4					
SC 12.4.4.c Compare and contrast the physical and biological differences of the early Earth with the planet we live on today	4					

Appendix D: Confidentiality Agreement

NEBRASKA DEPARTMENT OF EDUCATION

NEBRASKA STATE ACCOUNTABILITY

_____, _____

MONTH YEAR

CONFIDENTIALITY AGREEMENT

TEST SECURITY IS OF THE UTMOST IMPORTANCE TO THE NEBRASKA DEPARTMENT OF EDUCATION. AS A PARTICIPANT IN THIS _____, YOU HAVE ACCESS TO TEST ITEMS THAT MUST BE REGARDED AS CONFIDENTIAL. **DO NOT REPRODUCE ANY MATERIALS, DIRECTLY OR INDIRECTLY, DISCLOSE THE CONTENTS OF THESE MATERIALS, OR DISCUSS THE MATERIALS OR ANY ISSUES THAT ARISE DURING THE MEETINGS WITH INDIVIDUALS OUTSIDE OF THE MEETING ITSELF.**

WE ARE CERTAIN THAT YOU SHARE OUR CONCERN FOR TEST SECURITY AND ASK THAT YOU ACKNOWLEDGE YOUR ADHERENCE TO THIS AGREEMENT BY SIGNING BELOW.

LEGAL FIRST NAME *MI* *LEGAL LAST NAME*

SCHOOL

SIGNATURE *DATE*

Appendix E: Fairness in Testing Manual

FAIRNESS IN TESTING

Guidelines for Training
Bias, Fairness, and Sensitivity Issues

Table of Contents

INTRODUCTION

The most important part of the development of any new test is to ensure balanced treatment and control of potential bias, stereotyping, and insensitivity in the items or in the test-related materials. Data Recognition Corporation (DRC) understands that the presence of any type of bias in a test is undesirable not only from a civil rights point of view, but also from a measurement point of view. Issues of bias, fairness, and sensitivity in testing can have a direct impact on test scores. Our test developers are committed to the development of items and tests that are fair for all students. At every stage of the item and test development process, we employ procedures that are designed to ensure that our items and tests meet Standard 7.4 of the *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 1999).

> Standard 7.4: Test developers should strive to identify and eliminate language, symbols, words, phrases, and content that are generally regarded as offensive by members of racial, ethnic, gender, or other groups, except when judged to be necessary for adequate representation of the domain.

In meeting Standard 7.4, DRC employs a series of internal quality steps that we believe are among some of the best in the industry. We provide specific training for our test developers, item writers, and reviewers on how to write, review, revise, and edit items for issues of bias, fairness, and sensitivity, as well as for technical quality. Our training also includes an awareness of and sensitivity to issues of cultural diversity.

In addition to providing *internal* training in reviewing items in order to eliminate potential bias, we also provide *external* training to our clients, including state departments of education, review panels of minority experts, teachers, and other stakeholders. DRC understands the importance of having external panels with a wide variety of expertise in reviewing items and tests for potential bias. External panels of professionals provide a review of items for subtle forms of bias that often can be perceived only by individuals who possess a wide variety of appropriate expertise and represent specific constituencies.

This manual has been prepared to summarize DRC's guidelines for bias, fairness, and sensitivity, including how to eliminate language, symbols, words, phrases, and content that might be considered offensive by members of racial, ethnic, gender, or other groups. Our guidelines may be modified to meet client's requirements and/or state-specific guidelines.

DEFINITION OF BIAS

While there are many definitions of bias, the following definition is provided on page 76 of the *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 1999):

> The term *bias* in tests and testing refers to construct-irrelevant components that result in systematically lower or higher scores for identifiable groups of examinees. In other words, **bias is the presence of some characteristic of an item and/or test that results in two individuals of the same ability but from different subgroups performing differently on the item and/or test.** Therefore, it is most important that there are no ambiguities in the test items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries.

TYPES OF BIAS

There are many types of bias. They include stereotyping and discriminating against people because of gender, regional or geographical differences, ethnicity or culture, socioeconomic or class status, religion, or age, as well as bias against other groups of people, including those with disabilities. Another form of bias involves the use of questions and/or activities in the items or on a test as a whole that are not relevant to the life experiences of the students responding to the items or test. A definition of each type of bias, along with samples, is provided below.

STEREOTYPING

"Stereotype is an image formed by ascribing certain characteristics (e.g., physical, cultural, personal, occupational, historical) to all members of a group" (National Evaluation Systems, Inc. page 2). Stereotyping in test items and tests might include physical characteristics, intellectual characteristics, emotions, careers, activities, and domestic or social roles. In writing or reviewing test items, it is very important that all groups are portrayed fairly, without stereotyping. As a result, there should be a range of characteristics, careers, and social roles across all groups, and no one group should be characterized by any one particular attribute or characteristic. Following are examples of stereotyping.

Stereotype	***Examples***
PHYSICAL CHARACTERISTICS	MALES ARE STRONG AND CAPABLE LEADERS. Females are weak.

Types of Bias

Stereotyping (continued)

	The elderly are feeble and sickly. Children are healthy and full of energy. The elderly are dependent upon others. People with disabilities are dependent upon others. Females worry about their hair.
Intellectual characteristics	Males do better in mathematics and science. Females do better in reading and language arts. Asian Americans excel in academics.
Emotions	Males are aggressive, courageous, and strong. Females are weak, weepy, tender, and fearful.
Stereotyping	***Examples***
Careers	Females are nurses, teachers, and secretaries. Males are doctors, principals, superintendents, lawyers, and skilled laborers (e.g., plumbers, construction workers, painters). African-Americans are athletes. Hispanics operate lawn care businesses. Asian-Americans own dry cleaning businesses.
Activities	Females play with dolls and read books. Females do domestic chores (e.g., clean house, cook, sew). Females spend money. Males play sports and work with tools. Boys are rowdy. Girls are quiet.
Domestic and/or Social Roles	Females are responsible for childcare. Men work outside of the home and are the breadwinners.
Community	Asian-Americans live in ethnic neighborhoods. African-Americans live in high-rise apartment buildings located in urban areas. American Indians live on reservations.

Leadership	Men are leaders and rulers. Women are followers. Women are dependent on men. Men are elected to political positions. Females in leadership roles are aggressive and pushy.

TYPES OF BIAS (CONTINUED)

GENDER BIAS

Gender bias involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that show members of either sex in stereotypical activities, emotions, occupations, characteristics, and/or situations. Gender bias also involves the use of demeaning labels.

Examples of gender bias

TITLES AND SPECIFIC TERMS REFERRING TO HUMANITY AT LARGE, SUCH AS

- Mankind
- Manhood
- Manpower
- Man of the hour
- Man-hours
- Man-made

Use of gender specific terms for occupations, such as

- Fireman
- Workman
- Chairman
- Policeman
- Mailman
- Salesman
- Insurance man
- Businessman
- Congressman

Use of pronouns that imply a stereotype, such as

- The nurse went to the hospital, and *she* was able to talk with the patient.
- The factory worker needed to earn more money for *his* family.
- When the lawyer delivered *his* closing remarks, the jury listened carefully.
- A politician must give a lot of speeches when *he* runs for office.

TYPES OF BIAS

GENDER BIAS (CONTINUED)

Use of phrases that identify genders in terms of their roles or occupations, such as

- Men and girls were invited to the lecture.
- The travelers took their wives and children with them.
- The happy couple was introduced as man and wife.

Use of phrases or words with an emphasis on marital status, such as

- Abraham Lincoln and Mrs. Lincoln attended the play.
- George Washington and Martha visited the new building.
- Dr. and Mrs. Jones attended the opening of the new warehouse.
- The admirable Dr. George Halstead and his wife, Maria, visited the library.

Use of words that identify genders in the salutation of a business letter, such as

- Dear Sir:
- Dear Madam:
- Dear Gentlemen:

Use of words or phases that are not parallel, such as

- The girls' restroom is down the hall, and the men's restroom is on the second floor.
- The boys' locker room door is painted green, and the women's locker room door is painted yellow.
- The men's department is on the right; the ladies' department is on the left.

Use of figures of speech, such as

- Old wives' tale
- Right-hand man
- Man versus nature
- The best man for the job
- The better half

Use of gender-specific terms or diminutive words, such as

- Sweet young thing
- Usherette
- Housewife
- Maid
- Cleaning lady
- Little woman
- Career girl
- Houseboy
- Steward

TYPES OF BIAS (CONTINUED)

Regional or Geographical Bias

Regional and/or geographical bias involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that include terms that are not commonly used nationwide or within a particular region or state to which the test will be given. It also involves the use of terms that have different connotations in different parts of the country and/or geographical regions. It is important to note that some experiences may not be common to all students. For example, within a given geographic area not all students might be familiar with snow, so questions involving sleds and toboggans, for example, may well reflect a regional or geographical bias.

Examples of regional or geographical bias

- She ordered a new davenport (couch or sofa).
- Go get your toboggan (hat or type of sled).
- The students stood in line at the bubbler (water fountain or drinking fountain).
- Turn left at the berm (curb).
- Take the pike (road).

Ethnic or Cultural Bias

Ethnic bias involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that include terms that are demeaning and/or offensive to a particular ethnic group or culture. In addition, no minority group should be portrayed as being uneducated or poor.

Examples of ethnic or cultural bias

- Maria was in the kitchen making tacos.
- The Chinese owned a laundry in our area.
- Native Americans are very close to nature.

Terminology

Terms that have a negative connotation or that reinforce negative judgments should also be avoided. Following is a list of **acceptable** terms.

- African-American
- Asian-American or Pacific Island American
- Latino, Mexican-American, Hispanic
- Tribal name (preferred), Native American, American Indian

- European-American

TYPES OF BIAS (CONTINUED)

Socioeconomic or Class Bias

Socioeconomic or class bias involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that include activities, possessions, or ideas that may not be common to all students within a given area. For example, not all students in a given area own CD players or video games, nor do all students in a given area participate in certain sports activities, such as golf, snow skiing, or sailing. In addition, not all students in a given area take expensive vacations or attend expensive schools.

Examples of socioeconomic or class bias

- They were members of the country club.
- Boarding school.
- How many golf balls landed in the lake?
- The club members plan to go snow skiing over the holidays.
- My great aunt lives in a town house overlooking Lake Michigan.

Religious Bias

Religious bias involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that include terms that are demeaning and/or offensive to a particular religious group.

Examples of religious bias

- The house on Smith Street is decorated for Halloween.
- There were several Christmas trees in the window.
- The students in the class will stand and say the *Pledge of Allegiance*.
- The high school students will be attending a rock-and-roll dance at the community center.

It is also important to note that no religious belief or practice should be portrayed as a universal norm or as inferior or superior to any other.

Ageism (Bias Against a Particular Age Group)

There are other subtle forms of bias, including bias against the elderly or ageism. Ageism involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that include terms that are demeaning and/or offensive to the elderly or older persons (65 years or older). Ageism can also involve issues of bias with other age groups, including teenagers and young children.

It is important to note, however, that representing older persons or any age group fairly does not mean that the content of the items has to be revised or rewritten to seem unrealistic. Rather, as a whole, the items and the test should show older people or any age group in a variety of roles and activities whenever they appear naturally in the test content.

Examples of ageism (bias against a particular age group)

- Despite the fact that she was very old, she was able to walk down the stairs.
- The child's grandfather seemed senile.
- They were acting like typical irresponsible teenagers.

Bias Against Persons with Disabilities

Another form of subtle bias involves issues of bias related to persons with disabilities. This type of bias involves items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries that include terms that are demeaning and/or offensive to persons with disabilities. It is important to note, however, that representing persons with disabilities does not mean that the content of the items has to be revised or rewritten to seem unrealistic. Rather, as a whole, the items and the test should show people with disabilities in a variety of roles and activities whenever they appear naturally in the test content.

Examples of bias against persons with disabilities

- After the car accident, the student was confined to a wheelchair.
- He became a successful writer despite his disability.
- She is a blind person.
- The student is handicapped.
- The child made great strides in overcoming her disability.

TYPES OF BIAS

Bias Against Persons with Disabilities (continued)

Terminology

Terms that have a negative connotation or that reinforce negative judgments (crippled, victim, afflicted, confined, etc.) should also be avoided. It is also important that no one with a disability should be pictured as helpless or portrayed as pitiful.

Do not use	*Use*
Retarded	Developmentally delayed
Hard of hearing	Hearing impaired
Deaf and Dumb or Deaf-mute	Deaf or hard-of-hearing used accurately
Learning-disabled	Person with a learning disability
Handicap	Disability
	Visually-impaired or Blind used accurately

EXPERIENTIAL BIAS

The questions and activities reflected in the items or test, as a whole, should also be relevant to the life experiences of the students responding to the items. In other words, for a student to respond sensibly to the test questions, he or she must know what the question is about. In addition, culturally specific knowledge should be avoided, along with the use of difficult words and figures of speech.

Examples of experiential bias

- Pat knew she would win the race as she had an ace up her sleeve.
- Put the pedal to the metal and clean up your room.
- I needed change for the subway turnstile.
- The arroyos filled quickly during the storm.
- The super takes care of cleaning the foyer.

MAINTAINING BALANCE

Bias may also occur as a result of having a lack of balance through underrepresentation of a particular ethnic group and/or gender. Therefore, whenever possible, tests and test-related materials should contain content that is balanced across ethnic groups and across gender. The content of the pool of items and/or test, as a whole, should also reflect cultural diversity. In order to achieve balance, the test developers at DRC review the pool of items or the test, as a whole, to determine whether or not there is an adequate representation of

- Females and males in both traditional and nontraditional roles
- Female and male names
- Minority groups in various environments and occupations
- Minority groups, including the use of names

The issue of fairness also involves content inclusiveness. Subtle forms of bias can result from omitting certain areas of information and/or from omitting certain topics. Wherever possible, the content should show people in everyday situations and groups should be depicted as fully integrated in the society, reflecting the diverse multicultural composition of society as a whole (NES, page 9).

TOPICS TO AVOID

Because issues of bias, fairness, and sensitivity in testing can have a direct impact on the test scores, it is also important that sensitive and offensive topics be avoided. A topic might be considered offensive or controversial if it offends teachers, students, parents, or the community at large. This includes highly charged and controversial topics such as abortion, the death penalty, and evolution. Unacceptable content might also include less controversial topics, such as the use of tobacco or topics that could evoke unpleasant emotions on the part of a given student. In addition, topics that appear to promote or defend a particular set of values should be avoided. It is important to remember that the ability of the student to take the test should never be undermined. Following are examples of topics generally to be avoided.

Examples of topics to be generally avoided

- *ABORTION*
- Alcohol, including beer and wine
- Behaviors that are inappropriate, including stealing, cheating, lying, and other criminal and/or anti-social behaviors and activities
- Biographies of controversial figures whether or not they are still alive
- Birthdays
- Cancer and other diseases that might be considered fatal (HIV, AIDS)
- Criticism of democracy or capitalism
- Dangerous behavior
- Death of animals or animals dying or being mistreated
- Death, murder, and suicide
- Disasters, including tornadoes, hurricanes, etc. (unless treated as scientific subjects)
- Disrespect of any mainstream racial or religious group
- Double meanings of words that have sexually suggestive meanings
- Evolution
- Family experiences that may be upsetting, including divorce or loss of a job
- Feminist or chauvinistic topics
- Gambling
- Guns and gun control
- Holidays of religious origin (e.g., Halloween, Christmas, Easter)
- Junk food, including candy, gum, chips
- Left- or right-wing politics
- Luxuries (homes with swimming pools, expensive clothes, expensive vacations, and sports activities that typically require the purchase of expensive equipment such as snow skiing)

  - Parapsychology
  - Physical, emotional, and/or mental abuse, including animal, child, and/or spousal abuse
- Religions, except in appropriate historical context; mythology, folk tales, and fables may contain religious elements as part of appropriately presented literary excerpts.
- Sex, including kissing and dating
- Slavery (unless presented in an historical context and presented appropriately)
- Tobacco
- Violence against a particular group of people or animals
- Rock music, including rap and heavy metal
- Wars
- Witchcraft, sorcery, or magic
- Words that might be problematic to a specific ethnic group

SPECIAL CIRCUMSTANCES

In certain subject areas, a sensitive topic may be acceptable because the topic is a part of the course of study or may be required in order to measure the specific curriculum content standards and/or test objectives. For example, it may be appropriate to have test questions dealing with hurricanes. However, the questions should not focus unduly upon the destruction of property or the deaths of human beings. Other special circumstances include historical and literary contexts. A discussion of these special circumstances is provided below.

Historical Contexts

In order to measure the content curriculum standards, social studies tests often include topics that might otherwise be deemed as controversial. For example, in a history test, the topic of slavery might be used. The student would know that such a controversial topic is used to access knowledge of a particular curriculum content standard and/or set of objectives and, therefore, the topic would not reflect the views of the test developer.

Literary Contexts

Today's tests often require the use of authentic or previously published passages. As a result, sometimes a given passage or prompt might contain controversial material, including sentences, phrases, and/or words. If the overall passage or prompt is acceptable, it may be possible to edit and or delete the objectionable sentences, phrases, words, and/or references in order to eliminate the potential bias. In such cases, DRC test developers request permission from the publisher to make such edits and/or changes, and they would do so only if permission is granted.

POINTS TO REMEMBER

When reviewing items (questions and responses), passages prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries for issues of bias, fairness, and sensitivity, the following questions should be asked.

1. Do the items (questions and responses), passages, prompts, stimulus materials, artwork, graphs, charts, and test-related ancillaries:

   Demean any religious, ethnic, cultural, or social group?
   Portray anyone or any group in a stereotypical manner?
   Contain any other forms of bias, including gender, regional or geographical, ethnic or cultural, socioeconomic or class, religious, age-related bias, or bias against persons with disabilities?

2. Are there any topics that might disadvantage a student for any reason?

3. Are there any culturally specific sets of knowledge, terms, difficult words and/or figures of speech that might disadvantage a group of students?

4. Are the questions and activities reflected in the items or test, as a whole, relevant to the life experiences of the students responding to the items?

5. As a whole, does the test or pool of items have a balance across ethnic groups and across genders, including an adequate representation of:

   Females and males in both traditional and nontraditional roles
   Female and male names
   Minority groups in various environments and occupations
   Minority groups, including the use of ethnic names

6. Wherever possible, does the content show minority groups in everyday situations and groups depicted as fully integrated in the society, reflecting the multicultural composition of society as a whole?

Appendix E References

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Appendix F: Reading Key Verification and Foil Analysis

Grade 3

Grade 3 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	650565	A	282	.44	.44	.26	.22	.08	.00	.34	.34	.16	-.19
OP	650567	B	282	.71	.06	.71	.15	.07	.00	.57	-.10	.57	-.21
OP	650568	C	282	.66	.15	.12	.66	.07	.00	.46	.05	-.22	.46
OP	650570	A	282	.53	.53	.16	.24	.07	.00	.57	.57	-.14	-.15
OP	650572	B	282	.58	.13	.58	.21	.08	.00	.58	-.12	.58	-.16
OP	650577	B	282	.68	.10	.68	.14	.07	.00	.56	-.08	.56	-.18
OP	650578	B	282	.68	.09	.68	.15	.08	.00	.60	-.21	.60	-.13
OP	650582	C	282	.69	.11	.12	.69	.07	.00	.53	-.05	-.18	.53
OP	650583	B	282	.70	.10	.70	.13	.07	.00	.64	-.16	.64	-.22
OP	650586	A	282	.75	.75	.04	.13	.08	.00	.69	.69	-.23	-.22
OP	650617	C	282	.72	.08	.11	.72	.09	.00	.60	-.19	-.11	.60
OP	650619	A	282	.51	.51	.11	.29	.09	.00	.49	.49	-.15	-.03
OP	650626	C	282	.79	.05	.07	.79	.08	.00	.58	-.11	-.11	.58
OP	650627	B	282	.51	.09	.51	.31	.09	.00	.56	-.04	.56	-.17
OP	650631	C	282	.76	.07	.09	.76	.09	.00	.66	-.16	-.20	.66
OP	650753	C	282	.78	.09	.05	.78	.09	.00	.68	-.17	-.20	.68
OP	673811	B	282	.71	.10	.71	.10	.09	.00	.56	-.10	.56	-.11
OP	673814	A	282	.49	.49	.21	.22	.08	.00	.64	.64	-.13	-.19
OP	673815	A	282	.48	.48	.28	.15	.09	.00	.37	.37	.15	-.17
OP	675820	C	282	.73	.10	.09	.73	.08	.00	.49	-.01	-.11	.49
OP	675827	C	282	.80	.03	.09	.80	.08	.00	.71	-.17	-.26	.71
OP	675828	C	282	.57	.19	.15	.57	.09	.00	.58	-.05	-.22	.58
OP	675831	B	282	.62	.13	.62	.17	.08	.00	.67	-.17	.67	-.22
OP	675833	C	282	.65	.08	.19	.65	.09	.00	.51	-.08	-.09	.51
OP	675835	A	282	.80	.80	.05	.07	.08	.00	.71	.71	-.24	-.21
FT	691031	B	141	.35	.11	.35	.43	.11	.00	.28	-.04	.28	.21
FT	691033	A	141	.62	.62	.11	.16	.11	.00	.62	.62	-.11	-.12
FT	691034	C	141	.70	.13	.06	.70	.11	.00	.58	.00	-.17	.58
FT	691035	A	141	.30	.30	.27	.32	.11	.00	.35	.35	.14	.02
FT	691036	A	141	.61	.61	.09	.24	.06	.00	.50	.50	-.24	-.08
FT	691037	B	141	.51	.20	.51	.18	.11	.00	.50	-.01	.50	-.02
FT	691038	B	141	.36	.38	.36	.21	.06	.00	.44	-.01	.44	-.16
FT	691039	C	141	.77	.13	.04	.77	.06	.00	.47	-.06	-.20	.47
FT	691040	B	141	.45	.26	.45	.23	.06	.00	.41	.05	.41	-.18

Grade 3 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
FT	691041	A	141	.80	.80	.11	.02	.06	.00	.67	.67	-.28	-.22
FT	691042	A	141	.70	.70	.08	.16	.06	.00	.61	.61	-.10	-.29
FT	691043	B	141	.62	.12	.62	.20	.06	.00	.64	-.10	.64	-.32
FT	691044	B	141	.70	.11	.70	.13	.06	.00	.58	-.22	.58	-.14
FT	691045	C	141	.70	.05	.15	.70	.11	.00	.58	-.12	-.05	.58
FT	691046	C	141	.55	.13	.21	.55	.11	.00	.34	.09	.09	.34
FT	691048	C	141	.81	.03	.05	.81	.11	.00	.70	-.09	-.12	.70

Grade 4

Grade 4 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	650962	C	332	.76	.08	.10	.76	.07	.00	.60	-.14	-.25	.60
OP	650965	A	332	.61	.61	.18	.13	.07	.00	.53	.53	-.13	-.15
OP	650967	A	332	.51	.51	.29	.13	.07	.00	.43	.43	.00	-.19
OP	650970	A	332	.70	.70	.10	.14	.07	.00	.58	.58	-.19	-.15
OP	650972	C	332	.70	.11	.11	.70	.08	.00	.55	-.13	-.15	.55
OP	650973	B	332	.54	.15	.54	.23	.08	.00	.63	-.15	.63	-.19
OP	650974	A	332	.68	.68	.10	.14	.08	.00	.63	.63	-.12	-.25
OP	650976	A	332	.70	.70	.09	.12	.08	.00	.64	.64	-.16	-.23
OP	650978	C	332	.64	.20	.08	.64	.08	.00	.40	.03	-.11	.40
OP	650982	C	332	.67	.11	.14	.67	.08	.00	.45	-.01	-.12	.45
OP	650984	B	332	.50	.22	.50	.20	.08	.00	.43	.05	.43	-.17
OP	650986	A	332	.58	.58	.11	.23	.08	.00	.51	.51	-.19	-.06
OP	650990	B	332	.72	.09	.72	.11	.08	.00	.66	-.16	.66	-.25
OP	650993	A	332	.44	.44	.18	.30	.08	.00	.47	.47	.03	-.16
OP	651003	A	332	.57	.57	.09	.25	.09	.00	.53	.53	-.08	-.15
OP	651006	B	332	.60	.13	.60	.19	.08	.00	.59	-.05	.59	-.25
OP	651011	B	332	.44	.22	.44	.26	.08	.00	.40	.09	.40	-.14
OP	651015	C	332	.62	.13	.16	.62	.09	.00	.50	-.03	-.15	.50
OP	651019	A	332	.50	.50	.10	.31	.09	.00	.49	.49	-.08	-.08
OP	673816	B	332	.48	.20	.48	.23	.09	.00	.40	-.01	.40	-.03
OP	675849	C	332	.62	.14	.16	.62	.09	.00	.38	.05	-.08	.38
OP	675852	A	332	.71	.71	.09	.11	.09	.00	.67	.67	-.21	-.20
OP	675853	B	332	.72	.04	.72	.15	.08	.00	.72	-.15	.72	-.32
OP	675856	B	332	.63	.11	.63	.17	.09	.00	.67	-.16	.67	-.23
OP	675870	C	332	.61	.22	.08	.61	.09	.00	.44	-.01	-.11	.44

Grade 4 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
FT	691049	B	166	.43	.16	.43	.32	.09	.00	.47	.01	.47	-.08
FT	691050	C	166	.57	.16	.17	.57	.10	.00	.41	-.05	.05	.41
FT	691051	A	166	.70	.70	.10	.11	.10	.00	.62	.62	-.09	-.18
FT	691052	A	166	.70	.70	.11	.11	.08	.00	.70	.70	-.25	-.28
FT	691053	B	166	.51	.28	.51	.14	.08	.00	.52	.00	.52	-.31
FT	691054	A	166	.56	.56	.14	.22	.08	.00	.57	.57	-.17	-.16
FT	691055	C	166	.64	.10	.18	.64	.08	.00	.58	-.11	-.24	.58
FT	691056	A	166	.82	.82	.05	.05	.08	.00	.53	.53	-.03	-.20
FT	691057	B	166	.50	.17	.50	.25	.08	.00	.57	-.10	.57	-.21
FT	691058	C	166	.67	.11	.14	.67	.08	.00	.51	-.07	-.18	.51
FT	691059	B	166	.49	.17	.49	.25	.08	.00	.49	-.16	.49	-.06
FT	691060	C	166	.67	.04	.19	.67	.10	.00	.54	-.12	-.06	.54
FT	691061	C	166	.74	.10	.07	.74	.09	.00	.58	-.13	-.06	.58
FT	691062	B	166	.56	.18	.56	.16	.10	.00	.50	-.09	.50	-.02
FT	691063	B	166	.55	.17	.55	.18	.09	.00	.55	-.04	.55	-.15
FT	691064	A	166	.66	.66	.10	.14	.10	.00	.65	.65	-.16	-.16

Grade 5

Grade 5 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651121	C	326	.63	.14	.14	.63	.08	.00	.44	-.06	-.04	.44
OP	651122	B	326	.70	.08	.70	.15	.07	.00	.54	.00	.54	-.24
OP	651126	B	326	.59	.14	.59	.19	.08	.00	.56	-.06	.56	-.20
OP	651127	C	326	.72	.10	.09	.72	.09	.00	.56	-.09	-.13	.56
OP	651128	A	326	.62	.62	.16	.13	.09	.00	.58	.58	-.13	-.12
OP	651129	C	326	.66	.17	.07	.66	.09	.00	.50	-.04	-.11	.50
OP	651130	A	326	.63	.63	.08	.20	.09	.00	.70	.70	-.16	-.23
OP	651132	A	326	.63	.63	.11	.17	.09	.00	.58	.58	-.04	-.19
OP	651134	B	326	.63	.10	.63	.18	.10	.00	.67	-.05	.67	-.27
OP	651139	C	326	.57	.09	.25	.57	.09	.00	.30	-.09	.17	.30
OP	651142	A	326	.54	.54	.11	.26	.09	.00	.55	.55	-.08	-.12
OP	651147	A	326	.62	.62	.12	.17	.09	.00	.60	.60	-.05	-.21
OP	651152	A	326	.66	.66	.12	.14	.09	.00	.67	.67	-.10	-.26
OP	651154	A	326	.71	.71	.09	.10	.09	.00	.66	.66	-.08	-.25
OP	651156	B	326	.69	.10	.69	.12	.09	.00	.59	-.12	.59	-.14
OP	651161	C	326	.70	.12	.10	.70	.09	.00	.42	.02	-.05	.42

Grade 5 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651174	B	326	.65	.06	.65	.20	.09	.00	.59	-.10	.59	-.17
OP	673822	A	326	.59	.59	.10	.22	.09	.00	.55	.55	-.22	-.04
OP	673823	A	326	.50	.50	.10	.31	.09	.00	.56	.56	-.09	-.11
OP	673824	B	326	.54	.16	.54	.22	.09	.00	.45	.00	.45	-.08
OP	673825	C	326	.63	.14	.14	.63	.09	.00	.38	.05	-.04	.38
OP	673826	C	326	.75	.08	.08	.75	.09	.00	.61	-.08	-.18	.61
OP	675879	A	326	.63	.63	.12	.16	.09	.00	.68	.68	-.12	-.25
OP	675881	B	326	.61	.09	.61	.21	.09	.00	.56	-.12	.56	-.12
OP	675882	C	326	.82	.05	.04	.82	.09	.00	.64	-.15	-.13	.64
FT	691065	B	164	.57	.17	.57	.15	.11	.00	.40	-.01	.40	.09
FT	691066	A	164	.55	.55	.13	.21	.11	.00	.42	.42	-.05	.10
FT	691067	B	164	.76	.05	.76	.07	.11	.00	.72	-.17	.72	-.15
FT	691068	B	162	.80	.05	.80	.09	.06	.00	.69	-.21	.69	-.29
FT	691069	C	162	.50	.22	.22	.50	.07	.00	.26	.01	.07	.26
FT	691070	B	162	.57	.07	.57	.29	.07	.00	.51	-.14	.51	-.11
FT	691071	A	162	.65	.65	.10	.18	.07	.00	.62	.62	-.13	-.23
FT	691072	C	162	.68	.19	.07	.68	.06	.00	.30	.05	-.05	.30
FT	691073	C	162	.80	.06	.06	.80	.07	.00	.64	-.23	-.14	.64
FT	691074	A	162	.60	.60	.11	.22	.06	.00	.66	.66	-.13	-.32
FT	691075	B	162	.69	.12	.69	.12	.07	.00	.66	-.15	.66	-.28
FT	691076	A	164	.30	.30	.09	.50	.11	.00	.27	.27	.07	.17
FT	691077	B	164	.77	.09	.77	.02	.11	.00	.56	-.02	.56	-.01
FT	691078	C	164	.78	.09	.02	.78	.11	.00	.66	-.15	.00	.66
FT	691079	B	164	.57	.09	.57	.24	.11	.00	.60	-.17	.60	-.05
FT	691080	B	164	.67	.10	.67	.12	.11	.00	.63	-.06	.63	-.16

Grade 6

Grade 6 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651187	C	319	.65	.19	.11	.65	.05	.00	.53	-.19	-.24	.53
OP	651188	A	319	.58	.58	.06	.32	.04	.00	.54	.54	-.23	-.25
OP	651189	C	319	.75	.11	.10	.75	.03	.00	.46	-.17	-.20	.46
OP	651193	C	319	.71	.11	.14	.71	.04	.00	.24	-.01	-.02	.24
OP	651199	B	319	.69	.16	.69	.11	.04	.00	.62	-.19	.62	-.36
OP	651200	C	319	.68	.12	.15	.68	.04	.00	.36	-.01	-.17	.36

Grade 6 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651248	B	319	.57	.14	.57	.25	.04	.00	.45	-.05	.45	-.24
OP	651267	B	319	.72	.08	.72	.16	.04	.00	.53	-.07	.53	-.31
OP	651270	C	319	.80	.08	.07	.80	.05	.00	.54	-.17	-.20	.54
OP	651271	B	319	.72	.12	.72	.11	.05	.00	.48	-.14	.48	-.18
OP	651273	B	319	.81	.05	.81	.10	.05	.00	.63	-.18	.63	-.32
OP	651278	C	319	.70	.13	.12	.70	.05	.00	.47	-.09	-.21	.47
OP	651279	B	319	.55	.15	.55	.25	.05	.00	.48	-.04	.48	-.25
OP	651283	A	319	.60	.60	.10	.24	.05	.00	.56	.56	-.21	-.21
OP	651285	A	319	.52	.52	.14	.29	.05	.00	.42	.42	-.12	-.12
OP	651287	A	319	.54	.54	.17	.25	.05	.00	.47	.47	-.14	-.16
OP	651289	C	319	.76	.08	.11	.76	.05	.00	.44	-.04	-.19	.44
OP	673835	A	319	.64	.64	.15	.16	.05	.00	.63	.63	-.15	-.35
OP	673839	B	319	.61	.17	.61	.18	.05	.00	.60	-.17	.60	-.30
OP	673840	A	319	.69	.69	.11	.14	.06	.00	.58	.58	-.19	-.24
OP	673845	A	319	.67	.67	.12	.16	.05	.00	.60	.60	-.15	-.31
OP	675923	C	319	.71	.04	.20	.71	.05	.00	.41	-.20	-.07	.41
OP	675929	A	319	.63	.63	.15	.17	.05	.00	.61	.61	-.21	-.26
OP	675930	B	319	.68	.10	.68	.18	.05	.00	.67	-.17	.67	-.37
OP	675936	B	319	.70	.08	.70	.17	.05	.00	.56	-.10	.56	-.29
FT	691081	B	155	.73	.10	.73	.13	.05	.00	.64	-.18	.64	-.36
FT	691082	C	155	.77	.10	.08	.77	.05	.00	.47	-.10	-.22	.47
FT	691083	B	155	.68	.14	.68	.14	.05	.00	.56	-.06	.56	-.39
FT	691084	A	155	.67	.67	.11	.17	.05	.00	.66	.66	-.24	-.34
FT	691085	B	155	.61	.10	.61	.23	.05	.00	.60	-.12	.60	-.33
FT	691086	C	155	.84	.06	.06	.84	.05	.00	.50	-.14	-.18	.50
FT	691087	C	155	.79	.09	.06	.79	.05	.00	.48	-.07	-.26	.48
FT	691088	A	164	.59	.59	.08	.27	.05	.00	.58	.58	-.08	-.30
FT	691089	A	164	.80	.80	.08	.07	.05	.00	.40	.40	-.11	.01
FT	691090	C	164	.87	.03	.05	.87	.05	.00	.54	-.14	-.16	.54
FT	691091	B	164	.64	.05	.64	.25	.05	.00	.64	-.16	.64	-.32
FT	691092	B	164	.42	.19	.42	.34	.05	.00	.35	.01	.35	-.10
FT	691094	C	164	.80	.11	.04	.80	.05	.00	.52	-.15	-.19	.52
FT	691095	C	155	.73	.11	.12	.73	.05	.00	.49	-.01	-.33	.49
FT	691096	A	164	.70	.70	.09	.16	.05	.00	.57	.57	-.09	-.31
FT	691097	A	164	.73	.73	.05	.18	.05	.00	.74	.74	-.19	-.43

Grade 7

Grade 7 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651304	B	334	.67	.13	.67	.14	.06	.00	.63	-.24	.63	-.23
OP	651310	A	334	.69	.69	.11	.14	.06	.00	.64	.64	-.10	-.37
OP	651316	A	334	.44	.44	.30	.19	.07	.00	.41	.41	.07	-.17
OP	651358	C	334	.79	.06	.08	.79	.07	.00	.64	-.12	-.25	.64
OP	651360	A	334	.52	.52	.16	.26	.06	.00	.42	.42	-.07	-.12
OP	651362	B	334	.69	.08	.69	.16	.07	.00	.62	-.10	.62	-.26
OP	651364	C	334	.52	.22	.18	.52	.07	.00	.33	.05	-.03	.33
OP	651365	A	334	.65	.65	.09	.18	.07	.00	.71	.71	-.14	-.32
OP	651366	B	334	.72	.09	.72	.12	.07	.00	.61	.02	.61	-.33
OP	651367	B	334	.66	.06	.66	.21	.07	.00	.64	-.08	.64	-.27
OP	651377	C	334	.73	.06	.13	.73	.08	.00	.41	-.01	-.02	.41
OP	651379	A	334	.62	.62	.13	.17	.07	.00	.71	.71	-.16	-.31
OP	651381	B	334	.52	.23	.52	.17	.07	.00	.54	.00	.54	-.26
OP	651385	A	334	.79	.79	.03	.10	.07	.00	.66	.66	-.16	-.23
OP	651404	C	334	.66	.12	.14	.66	.07	.00	.45	-.05	-.07	.45
OP	651406	A	334	.68	.68	.10	.15	.07	.00	.63	.63	-.05	-.30
OP	673846	B	334	.80	.04	.80	.09	.07	.00	.70	-.09	.70	-.31
OP	673847	C	334	.66	.17	.10	.66	.08	.00	.45	.09	-.23	.45
OP	675944	C	334	.86	.03	.04	.86	.07	.00	.64	-.12	-.17	.64
OP	675948	A	334	.66	.66	.11	.16	.07	.00	.71	.71	-.15	-.31
OP	675950	A	334	.72	.72	.09	.12	.07	.00	.68	.68	-.11	-.31
OP	675952	A	334	.79	.79	.03	.10	.07	.00	.73	.73	-.14	-.32
OP	675956	A	334	.50	.50	.20	.22	.07	.00	.51	.51	-.03	-.16
OP	675957	B	334	.81	.03	.81	.09	.07	.00	.74	-.14	.74	-.33
OP	675960	A	334	.56	.56	.17	.19	.07	.00	.55	.55	-.09	-.16
FT	691098	C	169	.57	.07	.25	.57	.11	.00	.49	-.09	-.02	.49
FT	691099	B	169	.65	.06	.65	.18	.11	.00	.68	-.03	.68	-.27
FT	691100	A	169	.67	.67	.05	.17	.11	.00	.74	.74	-.13	-.27
FT	691101	A	165	.70	.70	.17	.08	.05	.00	.60	.60	-.19	-.26
FT	691102	C	165	.65	.13	.16	.65	.05	.00	.45	-.16	-.07	.45
FT	691103	A	165	.65	.65	.09	.21	.05	.00	.62	.62	-.17	-.28
FT	691104	B	165	.61	.07	.61	.27	.05	.00	.54	-.17	.54	-.20
FT	691105	C	169	.78	.06	.06	.78	.10	.00	.65	-.11	-.14	.65
FT	691106	A	169	.72	.72	.02	.15	.11	.00	.73	.73	-.15	-.26
FT	691107	B	169	.69	.06	.69	.14	.11	.00	.70	-.11	.70	-.23
FT	691108	C	165	.63	.12	.20	.63	.05	.00	.35	-.10	-.02	.35
FT	691109	B	165	.72	.12	.72	.12	.05	.00	.44	.02	.44	-.22

Grade 7 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
FT	691110	A	165	.55	.55	.24	.16	.05	.00	.49	.49	-.08	-.22
FT	691111	A	165	.75	.75	.10	.10	.05	.00	.71	.71	-.25	-.35
FT	691112	A	169	.82	.82	.07	.02	.10	.00	.66	.66	-.14	-.11
FT	691113	B	169	.67	.09	.67	.12	.11	.00	.68	-.09	.68	-.25

Grade 8

Grade 8 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651407	A	337	.50	.50	.20	.23	.07	.00	.53	.53	-.10	-.15
OP	651408	A	337	.66	.66	.14	.12	.07	.00	.57	.57	-.03	-.33
OP	651409	C	337	.68	.20	.05	.68	.07	.00	.44	-.02	-.18	.44
OP	651412	B	337	.70	.11	.70	.12	.08	.00	.68	-.16	.68	-.29
OP	651414	B	337	.40	.10	.40	.43	.08	.00	.42	-.15	.42	.01
OP	651416	A	337	.64	.64	.10	.18	.08	.00	.75	.75	-.20	-.32
OP	651417	C	337	.80	.05	.07	.80	.08	.00	.60	-.18	-.12	.60
OP	651418	B	337	.66	.14	.66	.12	.09	.00	.68	-.17	.68	-.23
OP	651421	C	337	.64	.21	.06	.64	.09	.00	.47	-.02	-.15	.47
OP	651426	B	337	.62	.09	.62	.20	.09	.00	.62	.03	.62	-.30
OP	651427	A	337	.42	.42	.28	.20	.09	.00	.41	.41	.17	-.20
OP	651430	C	337	.72	.09	.10	.72	.09	.00	.60	-.10	-.16	.60
OP	651433	B	337	.50	.15	.50	.25	.09	.00	.52	-.04	.52	-.13
OP	651434	B	337	.54	.28	.54	.09	.09	.00	.54	-.06	.54	-.18
OP	651435	B	337	.64	.09	.64	.18	.09	.00	.70	-.15	.70	-.26
OP	651436	B	337	.66	.06	.66	.18	.09	.00	.73	-.02	.73	-.36
OP	651441	A	337	.64	.64	.09	.17	.09	.00	.67	.67	-.11	-.24
OP	651443	A	337	.70	.70	.07	.14	.09	.00	.71	.71	-.11	-.29
OP	651445	C	337	.72	.07	.11	.72	.09	.00	.53	-.10	-.06	.53
OP	651455	A	337	.60	.60	.07	.23	.10	.00	.64	.64	-.15	-.18
OP	673876	B	337	.72	.07	.72	.11	.09	.00	.72	-.17	.72	-.25
OP	673884	A	337	.56	.56	.11	.23	.09	.00	.50	.50	-.04	-.09
OP	675966	B	337	.67	.16	.67	.08	.09	.00	.52	-.03	.52	-.16
OP	675969	C	337	.80	.04	.08	.80	.09	.00	.63	-.17	-.13	.63
OP	675976	C	337	.82	.03	.05	.82	.09	.00	.63	-.07	-.17	.63
FT	691114	A	168	.60	.60	.11	.17	.12	.00	.62	.62	.03	-.22
FT	691115	B	168	.69	.05	.69	.14	.11	.00	.77	-.17	.77	-.26
FT	691116	A	168	.37	.37	.33	.18	.12	.00	.42	.42	.21	-.18

Grade 8 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
FT	691117	C	168	.70	.11	.07	.70	.12	.00	.45	.13	-.05	.45
FT	691118	C	168	.81	.04	.03	.81	.12	.00	.70	-.12	-.10	.70
FT	691119	A	169	.53	.53	.10	.30	.07	.00	.50	.50	-.11	-.12
FT	691120	C	169	.56	.12	.25	.56	.07	.00	.22	.05	.08	.22
FT	691121	B	169	.33	.26	.33	.34	.07	.00	.32	-.01	.32	.03
FT	691122	B	169	.59	.08	.59	.26	.07	.00	.56	-.11	.56	-.20
FT	691123	C	169	.80	.08	.05	.80	.07	.01	.63	-.22	-.15	.63
FT	691124	C	169	.76	.07	.10	.76	.07	.00	.67	-.20	-.24	.67
FT	691125	B	169	.69	.09	.69	.14	.07	.00	.67	-.23	.67	-.24
FT	691126	A	169	.57	.57	.14	.21	.07	.00	.53	.53	.00	-.24
FT	691127	B	168	.49	.18	.49	.20	.12	.00	.54	-.01	.54	-.08
FT	691128	C	168	.73	.10	.06	.73	.12	.00	.50	.09	-.07	.50
FT	691129	A	168	.47	.47	.20	.21	.12	.00	.56	.56	-.01	-.11

Grade 11

Grade 11 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651337	A	297	.68	.68	.16	.10	.05	.00	.64	.64	-.17	-.36
OP	651356	A	297	.65	.65	.12	.16	.06	.00	.54	.54	-.14	-.18
OP	651410	C	297	.72	.10	.11	.72	.07	.00	.55	-.21	-.11	.55
OP	651424	A	297	.74	.74	.07	.12	.07	.00	.71	.71	-.20	-.28
OP	651429	C	297	.78	.09	.06	.78	.07	.00	.61	-.14	-.20	.61
OP	651437	B	297	.69	.09	.69	.14	.07	.00	.69	-.11	.69	-.34
OP	651444	C	297	.61	.11	.21	.61	.08	.00	.47	-.20	.03	.47
OP	651448	B	297	.60	.08	.60	.24	.08	.00	.63	-.06	.63	-.25
OP	651450	C	297	.67	.13	.13	.67	.08	.00	.52	-.07	-.14	.52
OP	651463	B	297	.67	.07	.67	.18	.08	.00	.66	-.20	.66	-.21
OP	651465	C	297	.82	.04	.05	.82	.08	.00	.66	-.13	-.22	.66
OP	651466	B	297	.50	.13	.50	.29	.07	.00	.43	-.09	.43	-.01
OP	651467	B	297	.58	.15	.58	.19	.08	.00	.58	-.02	.58	-.25
OP	651468	A	297	.81	.81	.04	.07	.07	.00	.69	.69	-.17	-.23
OP	651478	C	297	.66	.13	.13	.66	.08	.00	.49	-.09	-.06	.49
OP	651480	A	297	.62	.62	.14	.15	.08	.00	.66	.66	-.02	-.36
OP	673895	C	297	.69	.03	.21	.69	.07	.00	.60	-.17	-.18	.60
OP	673899	B	297	.81	.03	.81	.08	.08	.00	.59	-.18	.59	-.11
OP	673900	A	297	.77	.77	.09	.06	.08	.00	.76	.76	-.31	-.21

Grade 11 Reading													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	675977	A	297	.64	.64	.15	.14	.07	.00	.39	.39	.03	-.07
OP	675978	A	297	.78	.78	.05	.09	.08	.00	.72	.72	-.22	-.24
OP	675979	B	297	.83	.04	.83	.05	.08	.00	.71	-.18	.71	-.24
OP	675981	A	297	.73	.73	.08	.11	.08	.00	.72	.72	-.15	-.31
OP	675987	B	297	.74	.06	.74	.12	.08	.00	.75	-.21	.75	-.30
OP	675988	B	297	.75	.07	.75	.10	.08	.00	.72	-.13	.72	-.33
FT	691130	B	148	.66	.07	.66	.18	.09	.00	.62	-.05	.62	-.17
FT	691131	B	148	.31	.34	.31	.26	.09	.00	.26	.32	.26	-.14
FT	691132	C	149	.64	.21	.07	.64	.07	.00	.46	-.02	-.21	.46
FT	691133	B	149	.42	.26	.42	.25	.07	.00	.44	.09	.44	-.23
FT	691134	C	149	.40	.26	.28	.40	.07	.00	.23	-.10	.20	.23
FT	691135	B	149	.72	.11	.72	.10	.07	.00	.59	-.19	.59	-.18
FT	691136	A	149	.80	.80	.07	.07	.07	.00	.72	.72	-.26	-.28
FT	691137	C	149	.81	.07	.05	.81	.07	.00	.62	-.21	-.16	.62
FT	691138	B	149	.66	.13	.66	.15	.07	.00	.67	-.22	.67	-.27
FT	691139	A	149	.78	.78	.07	.08	.07	.00	.68	.68	-.21	-.28
FT	691140	A	148	.66	.66	.14	.12	.09	.00	.59	.59	-.05	-.15
FT	691141	A	148	.78	.78	.04	.08	.09	.01	.60	.60	-.14	-.05
FT	691142	C	148	.78	.08	.05	.78	.09	.00	.55	.05	-.14	.55
FT	691143	C	148	.39	.25	.27	.39	.09	.00	.15	.09	.22	.15
FT	691144	B	148	.69	.07	.69	.16	.09	.00	.55	-.15	.55	-.01
FT	691145	A	148	.84	.84	.05	.01	.09	.01	.56	.56	.02	.11

Appendix G: Mathematics Key Verification and Foil Analysis

Grade 3

Grade 3 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	650573	C	276	.84	.06	.05	.84	.05	.00	.59	-.19	-.22	.59
OP	650590	A	276	.65	.65	.11	.17	.07	.00	.48	.48	-.07	-.13
OP	650591	C	276	.71	.13	.08	.71	.07	.00	.52	-.06	-.17	.52
OP	650592	A	276	.84	.84	.04	.04	.07	.00	.72	.72	-.24	-.24
OP	650596	B	276	.58	.20	.58	.15	.08	.00	.50	-.05	.50	-.15
OP	650597	A	276	.43	.43	.27	.20	.09	.00	.28	.28	.17	-.04
OP	650600	C	276	.78	.09	.04	.78	.08	.00	.62	-.17	-.12	.62
OP	650602	B	276	.62	.14	.62	.16	.08	.00	.60	-.13	.60	-.17
OP	650603	C	276	.68	.16	.08	.68	.09	.00	.51	-.07	-.06	.51
OP	650604	B	276	.66	.10	.66	.14	.09	.00	.64	-.09	.64	-.19
OP	650605	B	276	.59	.08	.59	.24	.09	.00	.60	-.12	.60	-.13
OP	650608	A	276	.59	.59	.11	.21	.09	.00	.51	.51	-.05	-.06
OP	650609	B	276	.61	.15	.61	.15	.09	.00	.60	-.13	.60	-.13
OP	650611	A	276	.47	.47	.30	.13	.09	.00	.34	.34	.07	-.01
OP	650612	B	276	.65	.08	.65	.18	.09	.00	.59	-.16	.59	-.09
OP	650613	A	276	.65	.65	.06	.20	.09	.00	.62	.62	-.04	-.21
OP	650615	B	276	.74	.09	.74	.07	.09	.00	.65	-.12	.65	-.16
OP	650618	C	276	.54	.17	.19	.54	.09	.00	.44	-.10	.06	.44
OP	650628	B	276	.54	.11	.54	.26	.09	.00	.48	-.12	.48	.00
OP	650661	C	276	.54	.26	.11	.54	.09	.00	.48	.01	-.13	.48
OP	650662	C	276	.77	.07	.07	.77	.09	.00	.66	-.15	-.12	.66
OP	650667	B	276	.84	.03	.84	.04	.09	.00	.74	-.17	.74	-.19
OP	675834	B	276	.70	.07	.70	.14	.09	.00	.69	-.18	.69	-.19
OP	676126	C	276	.47	.12	.30	.47	.10	.00	.44	.01	-.03	.44
OP	676130	C	276	.68	.13	.09	.68	.09	.00	.58	-.15	-.04	.58
FT	690920	B	135	.59	.14	.59	.16	.11	.00	.70	-.22	.70	-.10
FT	690921	B	135	.73	.05	.73	.10	.11	.00	.74	-.13	.74	-.21
FT	690922	B	141	.64	.13	.64	.16	.07	.00	.54	-.19	.54	-.06
FT	690923	A	141	.55	.55	.13	.24	.07	.00	.57	.57	-.16	-.14
FT	690924	B	141	.72	.09	.72	.11	.07	.00	.63	-.18	.63	-.18
FT	690925	C	141	.43	.19	.30	.43	.08	.00	.27	-.05	.12	.27
FT	690926	A	135	.24	.24	.36	.27	.13	.00	.25	.25	.37	-.04
FT	690927	A	141	.54	.54	.13	.26	.07	.00	.59	.59	-.23	-.10
FT	690928	B	141	.45	.17	.45	.30	.08	.00	.42	-.01	.42	-.08
FT	690929	B	141	.55	.19	.55	.18	.08	.00	.51	-.02	.51	-.19

Grade 3 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
FT	690930	C	141	.43	.28	.21	.43	.08	.00	.41	.04	-.14	.41
FT	690931	C	135	.57	.16	.16	.57	.11	.00	.60	-.17	.00	.60
FT	690932	B	135	.46	.19	.46	.24	.12	.00	.53	.03	.53	-.06
FT	690933	B	135	.27	.17	.27	.42	.13	.01	.34	.07	.34	.16
FT	690934	C	135	.63	.14	.11	.63	.12	.00	.56	-.01	-.05	.56
FT	691213	B	135	.47	.16	.47	.24	.12	.00	.58	-.04	.58	-.06

Grade 4

Grade 4 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	650755	C	333	.59	.10	.24	.59	.07	.00	.58	-.25	-.12	.58
OP	650757	C	333	.69	.10	.14	.69	.08	.00	.61	-.08	-.29	.61
OP	650759	C	333	.71	.13	.09	.71	.07	.00	.57	-.15	-.18	.57
OP	650762	C	333	.76	.09	.07	.76	.08	.00	.69	-.27	-.20	.69
OP	650763	A	333	.66	.66	.10	.16	.08	.00	.63	.63	-.12	-.23
OP	650766	A	333	.62	.62	.14	.15	.09	.00	.54	.54	-.05	-.19
OP	650767	B	333	.43	.17	.43	.31	.08	.00	.54	-.13	.54	-.07
OP	650768	C	333	.74	.10	.08	.74	.08	.00	.61	-.18	-.12	.61
OP	650770	C	333	.73	.13	.05	.73	.08	.00	.63	-.17	-.19	.63
OP	650772	B	333	.61	.12	.61	.19	.08	.00	.52	-.06	.52	-.14
OP	650774	B	333	.61	.11	.61	.20	.08	.00	.64	-.15	.64	-.21
OP	650777	C	333	.38	.27	.26	.38	.09	.00	.20	.17	.03	.20
OP	650783	B	333	.50	.15	.50	.26	.08	.00	.54	-.13	.54	-.09
OP	650787	C	333	.69	.08	.13	.69	.09	.00	.59	-.14	-.14	.59
OP	650789	A	333	.53	.53	.18	.20	.08	.00	.52	.52	-.13	-.07
OP	650790	A	333	.53	.53	.23	.15	.09	.00	.42	.42	-.03	-.03
OP	650791	C	333	.73	.10	.08	.73	.09	.00	.69	-.25	-.17	.69
OP	650792	A	333	.71	.71	.08	.12	.09	.00	.63	.63	-.21	-.13
OP	650793	B	333	.62	.08	.62	.22	.09	.00	.64	-.10	.64	-.23
OP	650928	C	333	.57	.18	.17	.57	.09	.00	.60	-.11	-.18	.60
OP	650931	A	333	.50	.50	.20	.22	.09	.00	.52	.52	-.06	-.11
OP	673362	B	333	.52	.25	.52	.14	.09	.00	.49	-.06	.49	-.09
OP	676142	C	333	.80	.05	.06	.80	.09	.00	.66	-.18	-.16	.66
OP	676143	B	333	.72	.07	.72	.12	.09	.00	.64	-.20	.64	-.13
OP	676145	A	333	.59	.59	.11	.20	.10	.00	.58	.58	.00	-.23

Grade 4 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	676146	B	333	.61	.09	.61	.21	.09	.00	.61	-.22	.61	-.11
OP	676155	C	333	.66	.10	.15	.66	.09	.00	.57	-.13	-.12	.57
OP	676157	A	333	.53	.53	.14	.25	.09	.00	.51	.51	.00	-.16
OP	676158	A	333	.75	.75	.07	.09	.09	.00	.58	.58	-.04	-.19
OP	676160	A	333	.65	.65	.09	.17	.09	.00	.66	.66	-.10	-.27
FT	690935	A	165	.55	.55	.24	.12	.10	.00	.43	.43	.01	-.03
FT	690936	B	165	.52	.17	.52	.22	.10	.00	.60	-.08	.60	-.14
FT	690937	B	165	.59	.13	.59	.18	.10	.00	.64	-.16	.64	-.13
FT	690938	B	165	.41	.25	.41	.23	.10	.00	.46	.06	.46	-.10
FT	690939	C	165	.81	.06	.03	.81	.10	.00	.69	-.12	-.18	.69
FT	690940	C	165	.68	.12	.10	.68	.10	.00	.63	-.14	-.12	.63
FT	690941	B	168	.43	.25	.43	.24	.08	.00	.45	-.06	.45	-.08
FT	690942	B	168	.37	.14	.37	.40	.08	.00	.40	-.10	.40	.02
FT	690943	C	168	.71	.11	.10	.71	.08	.00	.67	-.23	-.22	.67
FT	690944	A	168	.56	.56	.09	.27	.08	.00	.54	.54	-.19	-.12
FT	690945	A	168	.40	.40	.28	.24	.08	.00	.32	.32	.19	-.18
FT	690946	A	168	.57	.57	.17	.18	.08	.00	.56	.56	-.11	-.17
FT	690947	C	168	.52	.26	.14	.52	.08	.00	.35	.02	-.04	.35
FT	690948	C	165	.58	.13	.19	.58	.10	.00	.51	-.02	-.10	.51
FT	690949	A	165	.47	.47	.10	.33	.10	.00	.42	.42	-.19	.12
FT	690950	C	168	.75	.10	.08	.75	.08	.00	.61	-.15	-.20	.61

Grade 5

Grade 5 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	650955	C	331	.69	.09	.14	.69	.08	.00	.59	-.23	-.09	.59
OP	650985	C	331	.51	.20	.20	.51	.09	.00	.39	-.03	.00	.39
OP	650987	B	331	.63	.14	.63	.15	.08	.00	.57	-.06	.57	-.22
OP	650991	A	331	.68	.68	.11	.13	.08	.00	.65	.65	-.11	-.27
OP	651002	A	331	.46	.46	.17	.29	.08	.00	.47	.47	-.04	-.09
OP	651004	A	331	.57	.57	.15	.19	.08	.00	.60	.60	-.06	-.24
OP	651007	C	331	.79	.11	.02	.79	.08	.00	.52	-.07	-.11	.52
OP	651009	B	331	.65	.11	.65	.16	.08	.00	.69	-.14	.69	-.29
OP	651010	C	331	.67	.10	.15	.67	.08	.00	.55	-.12	-.11	.55
OP	651013	C	331	.77	.05	.10	.77	.08	.00	.66	-.16	-.22	.66

Grade 5 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651017	B	331	.79	.05	.79	.08	.08	.00	.61	-.12	.61	-.15
OP	651021	A	331	.56	.56	.15	.20	.08	.00	.47	.47	-.06	-.07
OP	651022	A	331	.56	.56	.09	.26	.08	.00	.54	.54	-.13	-.10
OP	651023	A	331	.59	.59	.14	.18	.09	.00	.62	.62	-.17	-.17
OP	651028	B	331	.70	.07	.70	.15	.08	.00	.68	-.17	.68	-.24
OP	651030	A	331	.43	.43	.15	.34	.08	.00	.43	.43	-.01	-.05
OP	651031	B	331	.55	.17	.55	.20	.08	.00	.55	-.05	.55	-.19
OP	651040	B	331	.65	.15	.65	.12	.08	.00	.66	-.17	.66	-.21
OP	651045	C	331	.54	.17	.21	.54	.08	.00	.47	-.06	-.07	.47
OP	673364	B	331	.75	.07	.75	.10	.08	.00	.64	-.19	.64	-.17
OP	673365	C	331	.66	.10	.15	.66	.09	.00	.60	-.12	-.17	.60
OP	673369	B	331	.40	.20	.40	.31	.09	.00	.48	-.03	.48	-.08
OP	676190	C	331	.70	.11	.09	.70	.09	.00	.55	-.05	-.16	.55
OP	676192	B	331	.77	.06	.77	.08	.08	.00	.64	-.20	.64	-.14
OP	676194	A	331	.64	.64	.10	.17	.09	.00	.64	.64	-.07	-.25
OP	676196	C	331	.65	.09	.17	.65	.09	.00	.57	-.13	-.11	.57
OP	676197	A	331	.69	.69	.12	.10	.08	.00	.68	.68	-.20	-.22
OP	676200	C	331	.69	.08	.15	.69	.08	.00	.56	-.15	-.11	.56
OP	676201	A	331	.70	.70	.09	.13	.09	.00	.69	.69	-.22	-.20
OP	676202	A	331	.61	.61	.11	.19	.09	.00	.60	.60	-.09	-.18
FT	690951	A	167	.51	.51	.16	.22	.11	.00	.55	.55	-.03	-.11
FT	690952	A	167	.49	.49	.22	.19	.11	.00	.55	.55	.02	-.16
FT	690953	C	167	.40	.13	.37	.40	.11	.00	.07	.02	.37	.07
FT	690954	B	167	.27	.21	.27	.41	.11	.00	.20	-.05	.20	.31
FT	690955	B	164	.36	.38	.36	.19	.07	.00	.33	.15	.33	-.19
FT	690956	B	164	.46	.19	.46	.27	.07	.00	.32	.13	.32	-.11
FT	690957	A	164	.66	.66	.10	.17	.07	.00	.61	.61	-.17	-.20
FT	690958	C	164	.76	.10	.07	.76	.07	.00	.62	-.22	-.14	.62
FT	690959	C	164	.49	.16	.27	.49	.07	.00	.17	-.06	.23	.17
FT	690960	C	164	.60	.14	.19	.60	.07	.00	.42	-.05	-.06	.42
FT	690961	B	164	.43	.24	.43	.26	.07	.00	.44	.05	.44	-.17
FT	690962	C	164	.66	.11	.16	.66	.07	.00	.38	-.04	-.01	.38
FT	690963	B	167	.52	.17	.52	.20	.11	.00	.57	-.09	.57	-.07
FT	690964	B	167	.52	.21	.52	.16	.11	.00	.58	-.03	.58	-.15
FT	690965	A	167	.39	.39	.20	.31	.11	.00	.37	.37	.04	.05
FT	690966	A	167	.32	.32	.20	.37	.11	.00	.14	.14	.06	.28

Grade 6

Grade 6 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651184	B	317	.78	.07	.78	.12	.04	.00	.64	-.22	.64	-.32
OP	651322	C	317	.66	.12	.18	.66	.04	.00	.34	-.09	-.07	.34
OP	651323	C	317	.82	.06	.08	.82	.04	.00	.46	-.08	-.17	.46
OP	651325	A	317	.76	.76	.07	.12	.05	.00	.62	.62	-.21	-.26
OP	651327	B	317	.47	.26	.47	.22	.05	.00	.42	-.02	.42	-.19
OP	651328	B	317	.47	.13	.47	.35	.05	.00	.33	.00	.33	-.09
OP	651339	A	317	.47	.47	.12	.36	.05	.00	.44	.44	-.15	-.08
OP	651340	C	317	.75	.12	.08	.75	.05	.00	.44	-.03	-.19	.44
OP	651341	C	317	.78	.09	.08	.78	.05	.00	.40	.03	-.18	.40
OP	651343	C	317	.64	.14	.17	.64	.05	.00	.28	-.02	.01	.28
OP	651344	B	317	.53	.18	.53	.23	.05	.00	.46	-.05	.46	-.17
OP	651345	C	317	.65	.10	.20	.65	.05	.00	.29	-.01	-.03	.29
OP	651346	C	317	.85	.05	.05	.85	.05	.00	.59	-.15	-.21	.59
OP	651350	B	317	.81	.03	.81	.11	.05	.00	.58	-.11	.58	-.23
OP	651351	C	317	.70	.09	.16	.70	.05	.00	.45	-.13	-.10	.45
OP	651353	A	317	.54	.54	.15	.25	.05	.00	.45	.45	-.06	-.15
OP	651354	A	317	.63	.63	.15	.16	.05	.00	.56	.56	-.09	-.30
OP	651355	A	317	.65	.65	.14	.16	.05	.00	.57	.57	-.17	-.23
OP	651359	B	317	.62	.11	.62	.22	.05	.00	.58	-.11	.58	-.27
OP	651382	C	317	.62	.14	.20	.62	.05	.00	.41	-.07	-.11	.41
OP	651384	A	317	.62	.62	.19	.13	.05	.00	.50	.50	-.11	-.20
OP	651392	B	317	.65	.12	.65	.18	.05	.00	.62	-.12	.62	-.31
OP	651394	B	317	.70	.07	.70	.17	.05	.00	.61	-.15	.61	-.28
OP	651398	A	317	.59	.59	.17	.19	.05	.00	.48	.48	-.08	-.18
OP	673372	A	317	.70	.70	.15	.10	.05	.00	.56	.56	-.10	-.28
OP	676208	C	317	.68	.14	.14	.68	.05	.00	.39	-.11	-.04	.39
OP	676223	B	317	.77	.05	.77	.13	.06	.00	.61	-.12	.61	-.29
OP	676229	B	317	.57	.21	.57	.17	.05	.00	.54	-.12	.54	-.22
OP	676241	C	317	.72	.05	.17	.72	.05	.00	.47	-.15	-.10	.47
OP	676247	A	317	.61	.61	.10	.23	.05	.00	.57	.57	-.11	-.26
FT	690967	B	162	.56	.15	.56	.25	.05	.00	.39	.12	.39	-.23
FT	690968	B	162	.60	.14	.60	.22	.05	.00	.61	-.15	.61	-.28
FT	690969	A	162	.66	.66	.09	.20	.05	.00	.62	.62	-.14	-.30
FT	690970	B	162	.38	.22	.38	.35	.05	.00	.31	.03	.31	-.05
FT	690971	A	162	.35	.35	.35	.26	.05	.00	.34	.34	.17	-.25
FT	690972	C	162	.82	.03	.10	.82	.05	.00	.52	.02	-.22	.52

Grade 6 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
FT	690973	C	162	.51	.25	.19	.51	.05	.00	.24	.01	.03	.24
FT	690974	B	155	.61	.06	.61	.28	.05	.00	.54	.00	.54	-.30
FT	690975	B	155	.30	.16	.30	.48	.05	.00	.26	.06	.26	-.03
FT	690976	A	155	.59	.59	.14	.22	.05	.00	.61	.61	-.16	-.27
FT	690977	B	155	.37	.30	.37	.28	.05	.00	.32	.14	.32	-.20
FT	690978	A	155	.53	.53	.15	.27	.05	.00	.58	.58	-.06	-.31
FT	690979	B	155	.65	.13	.65	.17	.05	.00	.61	-.13	.61	-.31
FT	690980	B	155	.48	.13	.48	.34	.05	.00	.51	-.08	.51	-.20
FT	690981	A	155	.83	.83	.04	.08	.05	.00	.63	.63	-.13	-.30
FT	690982	A	162	.37	.37	.17	.40	.06	.00	.40	.40	-.11	-.02

Grade 7

Grade 7 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651845	C	332	.65	.16	.13	.65	.07	.00	.55	-.10	-.21	.55
OP	651850	B	332	.49	.19	.49	.25	.07	.00	.47	-.10	.47	-.09
OP	651851	A	332	.72	.72	.05	.16	.07	.00	.60	.60	-.15	-.20
OP	651852	A	332	.75	.75	.07	.11	.08	.00	.64	.64	-.14	-.18
OP	652047	A	332	.80	.80	.06	.07	.08	.00	.70	.70	-.21	-.19
OP	652095	C	332	.62	.11	.19	.62	.08	.00	.44	-.12	.03	.44
OP	652096	A	332	.53	.53	.14	.25	.08	.00	.57	.57	-.14	-.11
OP	652113	B	332	.52	.26	.52	.14	.08	.00	.58	-.10	.58	-.17
OP	652115	A	332	.81	.81	.04	.07	.08	.00	.69	.69	-.16	-.21
OP	652116	A	332	.56	.56	.07	.29	.08	.00	.55	.55	-.07	-.15
OP	652117	C	332	.61	.17	.14	.61	.08	.00	.40	.00	-.02	.40
OP	652118	B	332	.75	.07	.75	.10	.08	.00	.66	-.21	.66	-.16
OP	652119	B	332	.64	.13	.64	.15	.08	.00	.64	-.12	.64	-.22
OP	652121	C	332	.59	.16	.17	.59	.08	.00	.46	-.11	.01	.46
OP	652124	C	332	.52	.25	.16	.52	.08	.00	.32	.01	.05	.32
OP	652126	C	332	.61	.12	.20	.61	.08	.00	.44	-.08	.00	.44
OP	652131	C	332	.64	.16	.12	.64	.08	.00	.53	-.09	-.11	.53
OP	652140	C	332	.67	.14	.12	.67	.08	.00	.58	-.10	-.16	.58
OP	652141	C	332	.82	.05	.05	.82	.08	.00	.62	-.09	-.15	.62
OP	652145	B	332	.72	.12	.72	.09	.08	.00	.57	-.14	.57	-.09
OP	676286	B	332	.58	.08	.58	.25	.08	.00	.57	-.14	.57	-.13

Grade 7 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	676298	B	332	.54	.14	.54	.24	.08	.00	.59	-.14	.59	-.13
OP	676304	A	332	.78	.78	.07	.07	.08	.00	.64	.64	-.17	-.14
OP	676307	C	332	.83	.05	.05	.83	.08	.00	.63	-.14	-.12	.63
OP	676308	B	332	.61	.18	.61	.13	.08	.00	.61	-.13	.61	-.17
OP	676309	A	332	.75	.75	.08	.09	.08	.00	.66	.66	-.09	-.26
OP	676311	A	332	.58	.58	.13	.21	.08	.00	.57	.57	-.13	-.12
OP	676312	C	332	.60	.11	.21	.60	.08	.00	.34	-.10	.12	.34
OP	676316	A	332	.58	.58	.21	.13	.08	.00	.53	.53	-.07	-.14
OP	676317	A	332	.74	.74	.11	.06	.08	.00	.67	.67	-.19	-.18
FT	690983	A	171	.46	.46	.22	.22	.11	.00	.63	.63	.05	-.27
FT	690984	B	171	.57	.12	.57	.21	.11	.00	.61	-.07	.61	-.13
FT	690985	B	171	.33	.27	.33	.29	.11	.00	.28	.20	.28	.02
FT	690986	B	171	.65	.06	.65	.18	.11	.00	.70	-.11	.70	-.21
FT	690987	B	161	.47	.25	.47	.22	.05	.00	.42	.01	.42	-.18
FT	690988	B	161	.63	.11	.63	.20	.05	.00	.52	-.15	.52	-.17
FT	690989	C	161	.45	.31	.19	.45	.05	.00	.28	-.02	.02	.28
FT	690990	A	161	.43	.43	.17	.35	.05	.00	.30	.30	-.10	.05
FT	690991	B	161	.81	.08	.81	.06	.05	.00	.56	-.13	.56	-.21
FT	690992	C	161	.76	.11	.08	.76	.05	.00	.57	-.16	-.22	.57
FT	690993	B	161	.51	.14	.51	.30	.05	.00	.40	.00	.40	-.14
FT	690994	C	161	.30	.16	.49	.30	.05	.00	.03	-.06	.29	.03
FT	690995	B	171	.56	.13	.56	.20	.11	.00	.68	.03	.68	-.30
FT	690996	A	171	.75	.75	.06	.08	.11	.00	.73	.73	-.15	-.20
FT	690997	C	171	.79	.07	.04	.79	.11	.00	.63	.00	-.18	.63
FT	690998	C	171	.39	.14	.37	.39	.11	.00	.24	-.02	.24	.24

Grade 8

Grade 8 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	652149	B	344	.62	.06	.62	.25	.08	.00	.50	-.11	.50	-.12
OP	652152	A	344	.74	.74	.06	.13	.08	.00	.60	.60	-.12	-.19
OP	652153	B	344	.59	.20	.59	.13	.08	.00	.51	-.01	.51	-.22
OP	652157	C	344	.81	.05	.06	.81	.08	.00	.60	-.18	-.09	.60
OP	652158	B	344	.54	.16	.54	.22	.08	.00	.56	-.05	.56	-.18
OP	652160	C	344	.64	.12	.17	.64	.08	.00	.38	.03	-.03	.38

Grade 8 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	652162	C	344	.73	.06	.13	.73	.08	.00	.64	-.16	-.18	.64
OP	652163	A	344	.67	.67	.07	.17	.08	.00	.68	.68	-.13	-.25
OP	652164	B	344	.67	.09	.67	.15	.09	.00	.67	-.13	.67	-.22
OP	652166	A	344	.40	.40	.25	.26	.09	.00	.37	.37	.19	-.14
OP	652167	B	344	.71	.04	.71	.15	.10	.00	.68	-.11	.68	-.23
OP	652170	C	344	.59	.17	.15	.59	.09	.00	.37	.02	.03	.37
OP	652182	B	344	.66	.06	.66	.19	.09	.00	.69	-.14	.69	-.23
OP	652186	B	344	.45	.14	.45	.32	.09	.00	.50	-.04	.50	-.06
OP	652188	A	344	.79	.79	.04	.08	.09	.00	.70	.70	-.15	-.22
OP	652193	C	344	.66	.12	.13	.66	.09	.00	.49	-.06	-.03	.49
OP	652198	A	344	.60	.60	.24	.07	.09	.00	.63	.63	-.16	-.14
OP	652199	A	344	.53	.53	.18	.19	.09	.00	.56	.56	-.02	-.16
OP	673378	C	344	.60	.20	.11	.60	.09	.00	.35	.04	.04	.35
OP	673380	B	344	.81	.03	.81	.07	.09	.00	.68	-.09	.68	-.20
OP	673381	C	344	.75	.07	.08	.75	.10	.00	.64	-.11	-.16	.64
OP	676318	A	344	.56	.56	.20	.15	.09	.00	.53	.53	-.04	-.12
OP	676320	C	344	.68	.11	.11	.68	.09	.00	.59	-.12	-.11	.59
OP	676323	B	344	.43	.19	.43	.28	.09	.00	.47	.03	.47	-.09
OP	676324	A	344	.57	.57	.11	.23	.09	.00	.55	.55	-.10	-.08
OP	676325	A	344	.36	.36	.16	.38	.09	.00	.40	.40	-.07	.08
OP	676330	C	344	.58	.08	.26	.58	.09	.00	.41	-.17	.09	.41
OP	676332	B	344	.56	.11	.56	.24	.09	.00	.61	-.09	.61	-.16
OP	676333	C	344	.74	.05	.11	.74	.10	.00	.62	-.13	-.13	.62
OP	676334	B	344	.67	.09	.67	.15	.10	.00	.60	-.05	.60	-.17
FT	690999	A	173	.64	.64	.12	.12	.12	.00	.70	.70	-.03	-.26
FT	691000	B	173	.58	.09	.58	.21	.12	.00	.68	-.08	.68	-.18
FT	691001	B	173	.52	.10	.52	.26	.12	.00	.52	-.07	.52	.00
FT	691002	C	173	.76	.03	.08	.76	.12	.00	.56	-.04	.03	.56
FT	691003	B	173	.28	.28	.28	.32	.12	.00	.27	.29	.27	-.02
FT	691004	A	173	.43	.43	.26	.19	.12	.00	.44	.44	.15	-.11
FT	691005	B	171	.77	.05	.77	.11	.07	.00	.54	-.14	.54	-.11
FT	691006	B	171	.76	.09	.76	.08	.07	.00	.57	-.04	.57	-.24
FT	691007	C	171	.57	.18	.18	.57	.07	.01	.35	-.12	.10	.35
FT	691008	C	171	.73	.10	.11	.73	.07	.00	.61	-.25	-.11	.61
FT	691009	C	171	.43	.20	.30	.43	.07	.00	.25	-.01	.09	.25
FT	691010	A	171	.47	.47	.23	.23	.07	.00	.37	.37	.13	-.18
FT	691011	B	171	.56	.13	.56	.23	.07	.00	.57	-.01	.57	-.27
FT	691012	C	173	.65	.12	.11	.65	.12	.00	.53	-.04	.00	.53

Grade 8 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
FT	691013	C	173	.29	.35	.24	.29	.12	.00	.24	.24	.04	.24
FT	691014	C	171	.65	.13	.14	.65	.07	.00	.58	-.17	-.16	.58

Grade 11

Grade 11 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651135	A	304	.85	.85	.06	.04	.06	.00	.66	.66	-.28	-.20
OP	651164	C	304	.49	.26	.19	.49	.06	.00	.31	-.03	-.02	.31
OP	651166	B	304	.55	.22	.55	.17	.06	.00	.53	-.10	.53	-.20
OP	651168	C	304	.79	.09	.06	.79	.07	.00	.54	-.16	-.10	.54
OP	651169	B	304	.59	.16	.59	.18	.07	.00	.56	-.19	.56	-.13
OP	651171	B	304	.55	.19	.55	.20	.06	.00	.51	-.16	.51	-.11
OP	651173	B	304	.75	.11	.75	.08	.07	.00	.62	-.16	.62	-.20
OP	651177	B	304	.62	.20	.62	.11	.07	.00	.50	-.06	.50	-.17
OP	651180	B	304	.48	.27	.48	.18	.07	.00	.43	.05	.43	-.19
OP	651182	A	304	.63	.63	.18	.12	.07	.00	.55	.55	-.07	-.22
OP	651183	C	304	.68	.11	.14	.68	.07	.00	.57	-.17	-.14	.57
OP	651198	A	304	.59	.59	.10	.24	.07	.00	.51	.51	-.02	-.17
OP	651201	C	304	.61	.22	.10	.61	.07	.00	.50	-.12	-.10	.50
OP	651223	C	304	.73	.08	.12	.73	.07	.00	.62	-.14	-.22	.62
OP	651226	C	304	.71	.06	.16	.71	.07	.00	.50	-.19	-.05	.50
OP	651227	C	304	.74	.10	.09	.74	.07	.00	.55	-.23	-.07	.55
OP	651238	C	304	.55	.15	.22	.55	.08	.00	.44	-.14	.00	.44
OP	651311	A	304	.69	.69	.11	.13	.07	.00	.60	.60	-.15	-.21
OP	651319	B	304	.71	.13	.71	.09	.07	.00	.58	-.09	.58	-.25
OP	651320	B	304	.61	.10	.61	.23	.07	.00	.59	-.18	.59	-.16
OP	673384	A	304	.41	.41	.17	.34	.07	.00	.38	.38	-.03	-.01
OP	673385	A	304	.54	.54	.11	.27	.07	.00	.51	.51	-.14	-.10
OP	673387	B	304	.59	.13	.59	.22	.07	.00	.51	-.18	.51	-.07
OP	673388	B	304	.59	.13	.59	.21	.07	.00	.55	-.12	.55	-.15
OP	676337	C	304	.76	.11	.06	.76	.07	.00	.62	-.22	-.14	.62
OP	676343	A	304	.70	.70	.10	.13	.07	.00	.65	.65	-.24	-.17
OP	676347	A	304	.40	.40	.38	.14	.07	.00	.33	.33	.06	-.05
OP	676350	C	304	.74	.07	.12	.74	.07	.00	.64	-.18	-.21	.64
OP	676351	C	304	.83	.04	.06	.83	.07	.00	.63	-.22	-.12	.63
OP	676352	A	304	.83	.83	.05	.06	.07	.00	.64	.64	-.15	-.20

Grade 11 Mathematics													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
FT	691015	A	151	.52	.52	.21	.21	.06	.00	.29	.29	.04	-.04
FT	691016	A	151	.51	.51	.12	.31	.06	.00	.55	.55	-.10	-.22
FT	691017	A	151	.36	.36	.37	.19	.07	.01	.08	.08	.28	-.04
FT	691018	A	151	.36	.36	.28	.28	.07	.00	.22	.22	.04	.06
FT	691019	B	151	.40	.17	.40	.35	.07	.00	.10	.17	.10	.09
FT	691020	A	151	.23	.23	.25	.46	.07	.00	.07	.07	-.06	.30
FT	691021	B	153	.58	.15	.58	.19	.08	.00	.49	-.06	.49	-.08
FT	691022	B	153	.39	.25	.39	.28	.08	.00	.37	.12	.37	-.10
FT	691023	B	153	.42	.33	.42	.17	.08	.00	.37	.12	.37	-.13
FT	691024	C	153	.78	.10	.03	.78	.08	.01	.59	-.18	.00	.59
FT	691025	B	153	.54	.24	.54	.14	.08	.00	.46	.11	.46	-.25
FT	691026	C	153	.81	.07	.04	.81	.08	.00	.69	-.20	-.17	.69
FT	691027	B	153	.63	.05	.63	.24	.08	.00	.49	-.12	.49	-.06
FT	691028	B	153	.49	.16	.49	.27	.08	.00	.57	-.13	.57	-.11
FT	691029	B	151	.53	.08	.53	.33	.06	.00	.48	-.25	.48	-.07
FT	691030	B	151	.41	.30	.41	.23	.06	.00	.37	-.10	.37	.01

Appendix H: Science Key Verification and Foil Analysis

Grade 5

Grade 5 Science													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651053	B	325	.53	.09	.53	.29	.09	.00	.56	-.14	.56	-.15
OP	651056	A	325	.62	.62	.22	.08	.08	.00	.58	.58	-.11	-.24
OP	651058	B	325	.52	.17	.52	.22	.09	.00	.38	.11	.38	-.11
OP	651078	C	325	.47	.25	.20	.47	.09	.00	.33	.00	.03	.33
OP	651091	B	325	.67	.08	.67	.17	.08	.00	.64	-.14	.64	-.23
OP	651092	A	325	.66	.66	.18	.07	.09	.00	.55	.55	-.05	-.23
OP	651107	A	325	.66	.66	.09	.17	.09	.00	.64	.64	-.22	-.16
OP	651113	A	325	.66	.66	.07	.18	.09	.00	.70	.70	-.12	-.31
OP	651114	C	325	.75	.09	.07	.75	.09	.00	.56	-.11	-.13	.56
OP	651115	B	325	.67	.12	.67	.13	.08	.00	.64	-.16	.64	-.22
OP	651119	B	325	.51	.22	.51	.18	.09	.00	.52	-.05	.52	-.13
OP	673791	A	325	.73	.73	.13	.06	.08	.00	.69	.69	-.26	-.20
OP	676452	A	325	.48	.48	.19	.24	.09	.00	.53	.53	-.10	-.10
OP	676453	A	325	.61	.61	.10	.20	.09	.00	.64	.64	-.13	-.23
OP	676454	A	325	.58	.58	.11	.22	.09	.00	.65	.65	-.12	-.24
OP	676456	C	325	.67	.08	.16	.67	.08	.00	.48	-.10	-.06	.48
OP	676457	A	325	.67	.67	.06	.18	.09	.00	.72	.72	-.13	-.32
OP	676459	B	325	.50	.22	.50	.19	.09	.00	.53	-.09	.53	-.10
OP	676460	C	325	.63	.15	.13	.63	.09	.00	.51	-.05	-.12	.51
OP	676461	C	325	.67	.10	.14	.67	.09	.00	.47	-.02	-.08	.47
OP	676462	A	325	.73	.73	.09	.10	.08	.00	.61	.61	-.17	-.18
OP	676463	B	325	.70	.09	.70	.13	.09	.00	.72	-.19	.72	-.28
OP	676465	B	325	.63	.11	.63	.17	.10	.00	.64	-.07	.64	-.27
OP	676466	B	325	.70	.09	.70	.12	.09	.00	.71	-.17	.71	-.28
OP	676467	C	325	.80	.05	.06	.80	.09	.00	.62	-.15	-.13	.62
FT	691146	B	168	.61	.10	.61	.18	.11	.00	.58	-.03	.58	-.17
FT	691147	B	168	.67	.07	.67	.15	.11	.00	.61	-.02	.61	-.20
FT	691148	A	168	.63	.63	.15	.11	.11	.00	.60	.60	-.07	-.17
FT	691149	C	168	.54	.16	.19	.54	.11	.00	.36	.01	.07	.36
FT	691150	B	168	.46	.17	.46	.26	.11	.00	.49	-.13	.49	.04
FT	691151	A	157	.75	.75	.06	.12	.07	.00	.69	.69	-.08	-.38
FT	691152	C	157	.55	.29	.09	.55	.06	.00	.30	.12	-.21	.30
FT	691153	B	157	.77	.06	.77	.10	.07	.00	.71	-.20	.71	-.31
FT	691154	A	157	.73	.73	.08	.11	.08	.00	.79	.79	-.23	-.39
FT	691155	B	157	.71	.14	.71	.08	.07	.00	.59	-.11	.59	-.27

Grade 5 Science													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
FT	691156	C	157	.75	.05	.13	.75	.07	.00	.52	-.10	-.14	.52
FT	691157	A	157	.69	.69	.06	.18	.07	.00	.63	.63	-.15	-.25
FT	691158	A	168	.58	.58	.23	.09	.11	.00	.53	.53	.02	-.22
FT	691159	A	168	.70	.70	.05	.14	.11	.00	.67	.67	-.16	-.18
FT	691160	C	168	.79	.05	.05	.79	.11	.00	.66	-.19	-.08	.66
FT	691212	A	157	.82	.82	.07	.04	.06	.00	.40	.40	-.10	.08

Grade 8

Grade 8 Science													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651233	B	333	.66	.17	.66	.10	.08	.00	.62	-.11	.62	-.29
OP	651235	B	333	.56	.13	.56	.22	.08	.00	.62	-.09	.62	-.22
OP	651236	A	333	.67	.67	.07	.17	.09	.00	.68	.68	-.11	-.28
OP	651239	B	333	.72	.07	.72	.12	.09	.00	.62	-.09	.62	-.17
OP	651246	B	333	.53	.15	.53	.23	.09	.00	.51	-.08	.51	-.08
OP	651256	A	333	.65	.65	.23	.04	.09	.00	.46	.46	-.05	-.05
OP	651258	B	333	.53	.22	.53	.15	.09	.00	.54	-.05	.54	-.14
OP	651261	A	333	.65	.65	.11	.14	.09	.00	.72	.72	-.11	-.31
OP	651263	C	333	.63	.06	.22	.63	.10	.00	.39	-.13	.11	.39
OP	651264	C	333	.54	.13	.24	.54	.10	.00	.29	-.05	.17	.29
OP	651284	A	333	.59	.59	.09	.22	.10	.00	.60	.60	-.02	-.20
OP	651291	C	333	.76	.08	.05	.76	.10	.00	.45	-.01	.07	.45
OP	651292	B	333	.54	.09	.54	.27	.10	.00	.54	-.01	.54	-.13
OP	651300	C	333	.70	.13	.07	.70	.10	.00	.57	-.09	-.10	.57
OP	673795	B	333	.73	.05	.73	.12	.10	.00	.75	-.14	.75	-.29
OP	673796	A	333	.58	.58	.18	.14	.10	.00	.62	.62	-.10	-.17
OP	673797	B	333	.66	.08	.66	.16	.10	.00	.70	-.17	.70	-.20
OP	673798	A	333	.66	.66	.07	.17	.10	.00	.68	.68	-.10	-.23
OP	673799	A	333	.62	.62	.11	.17	.10	.00	.67	.67	-.03	-.29
OP	673800	A	333	.68	.68	.09	.13	.10	.00	.67	.67	-.04	-.26
OP	676474	A	333	.63	.63	.13	.15	.10	.00	.63	.63	-.09	-.19
OP	676475	B	333	.56	.17	.56	.17	.10	.00	.53	.01	.53	-.16
OP	676476	C	333	.78	.04	.08	.78	.10	.00	.60	-.10	-.10	.60
OP	676477	C	333	.64	.07	.19	.64	.11	.00	.43	-.15	.11	.43
OP	676478	C	333	.61	.08	.21	.61	.10	.00	.47	-.08	.00	.47
FT	691161	C	167	.37	.28	.23	.37	.13	.00	.04	.38	.13	.04

Grade 8 Science													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
FT	691162	A	167	.59	.59	.13	.15	.13	.00	.69	.69	-.05	-.23
FT	691163	C	167	.62	.17	.08	.62	.13	.00	.49	.04	-.03	.49
FT	691164	B	167	.41	.23	.41	.23	.13	.00	.47	.13	.47	-.11
FT	691165	A	167	.59	.59	.10	.18	.13	.00	.70	.70	-.08	-.20
FT	691166	B	167	.54	.19	.54	.14	.13	.00	.51	.13	.51	-.17
FT	691167	C	167	.76	.07	.04	.76	.13	.00	.65	-.13	-.01	.65
FT	691168	B	166	.58	.16	.58	.20	.07	.00	.54	-.08	.54	-.19
FT	691169	B	166	.83	.04	.83	.06	.07	.00	.64	-.17	.64	-.19
FT	691170	C	166	.80	.07	.07	.80	.07	.00	.69	-.22	-.22	.69
FT	691171	B	166	.83	.05	.83	.05	.07	.00	.66	-.24	.66	-.15
FT	691172	C	166	.61	.12	.20	.61	.07	.00	.50	-.20	-.04	.50
FT	691173	C	166	.79	.08	.06	.79	.07	.00	.69	-.22	-.24	.69
FT	691174	C	166	.69	.11	.13	.69	.07	.00	.47	-.14	-.03	.47
FT	691175	C	167	.69	.13	.05	.69	.13	.00	.44	.15	-.05	.44
FT	691176	A	166	.81	.81	.07	.07	.06	.00	.47	.47	-.02	-.13

Grade 11

Grade 11 Science													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	651769	A	296	.61	.61	.18	.14	.07	.00	.63	.63	-.11	-.26
OP	651770	C	296	.77	.07	.08	.77	.08	.00	.72	-.22	-.24	.72
OP	651772	B	296	.58	.19	.58	.15	.08	.00	.51	.02	.51	-.21
OP	651773	B	296	.69	.08	.69	.15	.08	.00	.73	-.14	.73	-.33
OP	651776	A	296	.77	.77	.08	.08	.08	.00	.75	.75	-.17	-.33
OP	651778	C	296	.68	.10	.14	.68	.07	.00	.47	-.08	-.09	.47
OP	651784	A	296	.63	.63	.15	.15	.08	.00	.54	.54	-.11	-.12
OP	651785	C	296	.68	.14	.11	.68	.08	.00	.51	-.19	.02	.51
OP	651787	B	296	.72	.08	.72	.12	.08	.00	.61	-.10	.61	-.21
OP	651788	C	296	.63	.21	.09	.63	.07	.00	.43	.01	-.13	.43
OP	651792	A	296	.77	.77	.06	.09	.08	.00	.73	.73	-.17	-.30
OP	651793	B	296	.59	.14	.59	.20	.08	.00	.61	-.13	.61	-.18
OP	651798	B	296	.65	.09	.65	.19	.07	.00	.63	-.19	.63	-.21
OP	651808	A	296	.45	.45	.07	.41	.07	.00	.35	.35	-.10	.04
OP	651817	A	296	.73	.73	.05	.13	.08	.00	.71	.71	-.14	-.31
OP	651822	A	296	.58	.58	.07	.28	.07	.00	.56	.56	-.17	-.12
OP	651824	B	296	.63	.09	.63	.20	.07	.00	.66	-.14	.66	-.25

Grade 11 Science													
GENERAL			COUNTS	PROPORTIONS						CORRELATIONS			
Type	Item ID	Key	N	P-Value	A	B	C	-	*	Total	A	B	C
OP	673804	A	296	.75	.75	.08	.08	.08	.00	.70	.70	-.20	-.25
OP	673806	B	296	.58	.16	.58	.19	.08	.00	.55	-.14	.55	-.10
OP	673808	A	296	.55	.55	.15	.22	.08	.00	.37	.37	-.06	.04
OP	673809	C	296	.54	.21	.17	.54	.08	.00	.29	.09	.00	.29
OP	676484	B	296	.64	.15	.64	.14	.07	.00	.68	-.26	.68	-.17
OP	676486	A	296	.86	.86	.02	.03	.08	.00	.73	.73	-.21	-.22
OP	676487	C	296	.80	.06	.06	.80	.08	.00	.67	-.20	-.17	.67
OP	676489	A	296	.77	.77	.03	.12	.08	.00	.69	.69	-.16	-.25
OP	676490	C	296	.77	.07	.07	.77	.08	.00	.63	-.14	-.19	.63
OP	676494	B	296	.79	.05	.79	.08	.08	.00	.77	-.23	.77	-.30
OP	676495	B	296	.74	.10	.74	.08	.08	.00	.64	-.15	.64	-.21
OP	676496	C	296	.69	.16	.07	.69	.08	.00	.55	-.09	-.16	.55
OP	676498	A	296	.73	.73	.06	.13	.08	.00	.67	.67	-.21	-.20
FT	691177	A	148	.67	.67	.11	.15	.07	.00	.51	.51	-.15	-.10
FT	691178	C	148	.80	.07	.04	.80	.09	.00	.66	-.12	-.14	.66
FT	691179	C	148	.65	.05	.22	.65	.09	.00	.50	-.11	-.02	.50
FT	691180	B	148	.74	.09	.74	.08	.09	.00	.70	-.08	.70	-.28
FT	691181	A	148	.54	.54	.28	.09	.09	.00	.42	.42	.14	-.24
FT	691182	C	148	.82	.05	.03	.82	.09	.00	.69	-.14	-.13	.69
FT	691183	A	148	.55	.55	.29	.07	.09	.00	.56	.56	-.06	-.17
FT	691184	A	148	.70	.70	.05	.16	.09	.00	.69	.69	-.01	-.30
FT	691185	C	148	.77	.11	.05	.77	.07	.00	.62	-.24	-.13	.62
FT	691186	C	148	.67	.13	.14	.67	.07	.00	.63	-.17	-.24	.63
FT	691187	C	148	.78	.05	.11	.78	.07	.00	.73	-.24	-.31	.73
FT	691188	C	148	.79	.08	.06	.79	.07	.00	.56	-.14	-.14	.56
FT	691189	B	148	.51	.26	.51	.16	.07	.00	.49	.00	.49	-.23
FT	691190	A	148	.63	.63	.16	.15	.07	.00	.67	.67	-.14	-.33
FT	691191	C	148	.82	.05	.07	.82	.07	.00	.72	-.21	-.30	.72
FT	691192	A	148	.61	.61	.26	.05	.09	.00	.32	.32	.13	-.01

APPENDIX I: OVERVIEW OF RASCH MEASUREMENT

Most psychometricians agree that, when possible, the Rasch model is the preferred approach to manage the assessment and reporting processes (Rasch, 1960; Wright & Stone, 1979; Smith & Smith, 2004; Mead, 2008). For non-statisticians, the most compelling reasons may be that the Rasch model:

- is simple to apply, and
- preserves the number-correct ordering.

Simplicity makes the methods (relatively) easy to explain and the results to interpret. The results are straightforward and readily defended in front of administrators, parents, educators, and courts. And nontrivially, the simplicity helps meet the increasingly demanding time lines for reporting.

With number-correct scoring, students with more correct responses are always considered more proficient than students with fewer correct. This is intuitively obvious, based on more than a century of experience using and interpreting such scores.

For statisticians, the attractions of the Rasch model are more esoteric, including:

- an interval scale of measurement,
- meaningful estimates of the standard errors at each raw score, and,
- simple sufficient statistics for person and item parameters.

The interval scale makes it possible to construct a ruler and place the students and the items on the same ruler, along with any performance expectations or normative information. A difference of, say, 10 scale score units will have the same meaning at any point along the scale and will have the same implications when comparing a student to earlier assessments, to an item, to normative information, to expectations, to a growth target, or to another student.

The sufficient statistics are essential to the simplicity. They make it possible to derive estimation equations for person parameters that do not involve the item parameters and for the item parameters that do not involve person parameters. It does not matter which items are used for the assessment or which students are used for the calibration, given the items are appropriate for the students.

Still more compelling, once the sufficient statistics have been extracted, there is nothing remaining in the data that is directly relevant to the measurement. Any residual information can be used to control and monitor the model. The residuals contain diagnostic information about the student's performance on specific items or clusters of items.

The model does, however, place special demands on the item development and test construction processes. In essence, the model requires that all items, while imperfect, be equally valid and reliable instances of the construct. When sufficient care is taken in item and test development, most achievement test data can adequately satisfy the demands of the model and help realize its advantages of valid measurement, quality control, and effective, timely reporting.

The Rasch Philosophy of Measurement

George Rasch (1960), to derive data that he considered worthy of the name measurement, reasoned that the interaction between the person and the item must be governed by a single person parameter (ability) and a single item parameter (difficulty). If person *A* has more ability than person *B*, then *A* is more likely than *B* to answer any item correctly. If item *i* is more difficult than item *j*, then any person is less likely to answer item *i* correctly. These two common sense assertions are axiomatic to Rasch Measurement and must hold regardless of any other characteristics of the people or the items.

This reasoning led Rasch to the simple logistic model, which had several very useful and closely related properties touched on above (Rasch, 1960, 1977):

- *Simplicity*, which allows straightforward calculations, ready communication, and interpretation of the measures (Wright & Stone, 1979),
- *Separability* of the model parameters (Rasch, 1960),
- *Sufficiency* that does not involve the parameters (Andersen, 1977),
- *Specific objectivity*, sometimes called *person-free[d]* calibration and *item-free[d]* measurement (Wright, 1968), and

Specific objectivity means that the estimation equations for ability do not involve the difficulty parameters, and the equations for difficulty do not involve the ability parameters. Specific objectivity is possible when *sufficient statistics* for the parameters exist. The sufficient statistics exist because the parameters are *separable* in the model.

In practical terms, the students can be ordered on the measurement continuum by their number correct scores and the items can be ordered on the same continuum by the number of correct responses. No other information is necessary for the measurement and anything remaining in the data can be used to control and monitor fit to the model. Specific objectivity is the cornerstone of the Rasch family of measurement models (Wright & Mok, 1980).

THE MODEL FOR MEASUREMENT

Dichotomous Items

Multiple-choice items (MC) are calibrated using the most familiar form of the model (Rasch, 1960; Wright & Panchapakesan, 1969; Wright & Stone 1979; Andrich, 1988; Fischer & Molenaar, 1995; Smith & Smith, 2004). The Rasch model applicable to dichotomously scored items, given person ability and item difficulty, can be seen in the basic statement of the model.

The probability of success for a person with ability β_v on an item with difficulty δ_i is a function of the difference between the ability of the person and the difficulty of the item; mathematically:

1. $$P(right \mid \beta_v, \delta_i) = \frac{e^{\beta_v - \delta_i}}{1 + e^{\beta_v - \delta_i}} = \frac{B_v}{B_v + \Delta_i}, \text{ where } B_v = e^{\beta_v} \text{ and } \Delta_i = e^{\delta_i}.$$

This is the probability of scoring one rather than zero on an item for which those are the only possibilities. This expression results in the familiar S-shaped curve relating the ability-difficulty metric to number correct score. Its simplicity makes it especially suited for educational assessment by drawing a clear distinction between the information (captured in the parameter estimates by the sufficient statistics) relevant to estimating the ability property that all examinees share and the information relevant to describing unique characteristics of individuals.

The model returns the identical estimated ability for every student with the same number correct score on a form. In the estimation phase, there is no distinction between the student who passes the easy item and misses the difficult items and the student who misses the easy items and passes the difficult ones. At the control and diagnostic stage, there is a great deal of difference between the two situations. In the first, there is a very clear statement of the person's true location on the construct; in the second, there are two very different statements when the two halves of the test are viewed separately.

This is the stage at which Rasch focuses his concern for the control of the model. The model itself provides a probability statement about any outcome. Typically, one examines the residuals, which can be expressed as the odds against the observed response. When these are collected and dissected, the conclusion for the first student would be nothing surprising occurred; for the second student, most of the responses were surprising. This diagnostic information can be put to good use when reporting and interpreting the test scores.

The strong measurement model is the instrument for understanding the scores, whether it concludes the student was accurately and validly measured or not. It will help lead the teacher and students to the most appropriate next steps.

CALIBRATION: ESTIMATING ITEM DIFFICULTIES

DRC uses the Rasch measurement model to estimate the student proficiencies and to control the assessment process. The model provides straightforward algorithms to compute ability estimates on a unidimensional, equal-interval scale of measurement from the number correct scores.

WINSTEPS (2012) implements the joint maximum likelihood estimation procedure (Linacre, 2012) for estimating item difficulties. This calibration software is commercially available and widely used in the testing industry. In addition to performing item calibration and ability estimation, the capabilities of the WINSTEPS program will be utilized to assess unidimensionality, item interdependence, and other deviations from the model. The program also has several options for exploring the person-item residual matrix (Mead, 1976, 2008; Ludlow 1986; Smith, 2000).

In the simplest formulation, estimating either the item difficulty or the person ability involves solving the fundamental equation that states the observed score must equal the expected score. For example, the ability estimate for a person who scores *r* on a set of *L* items is derived from:

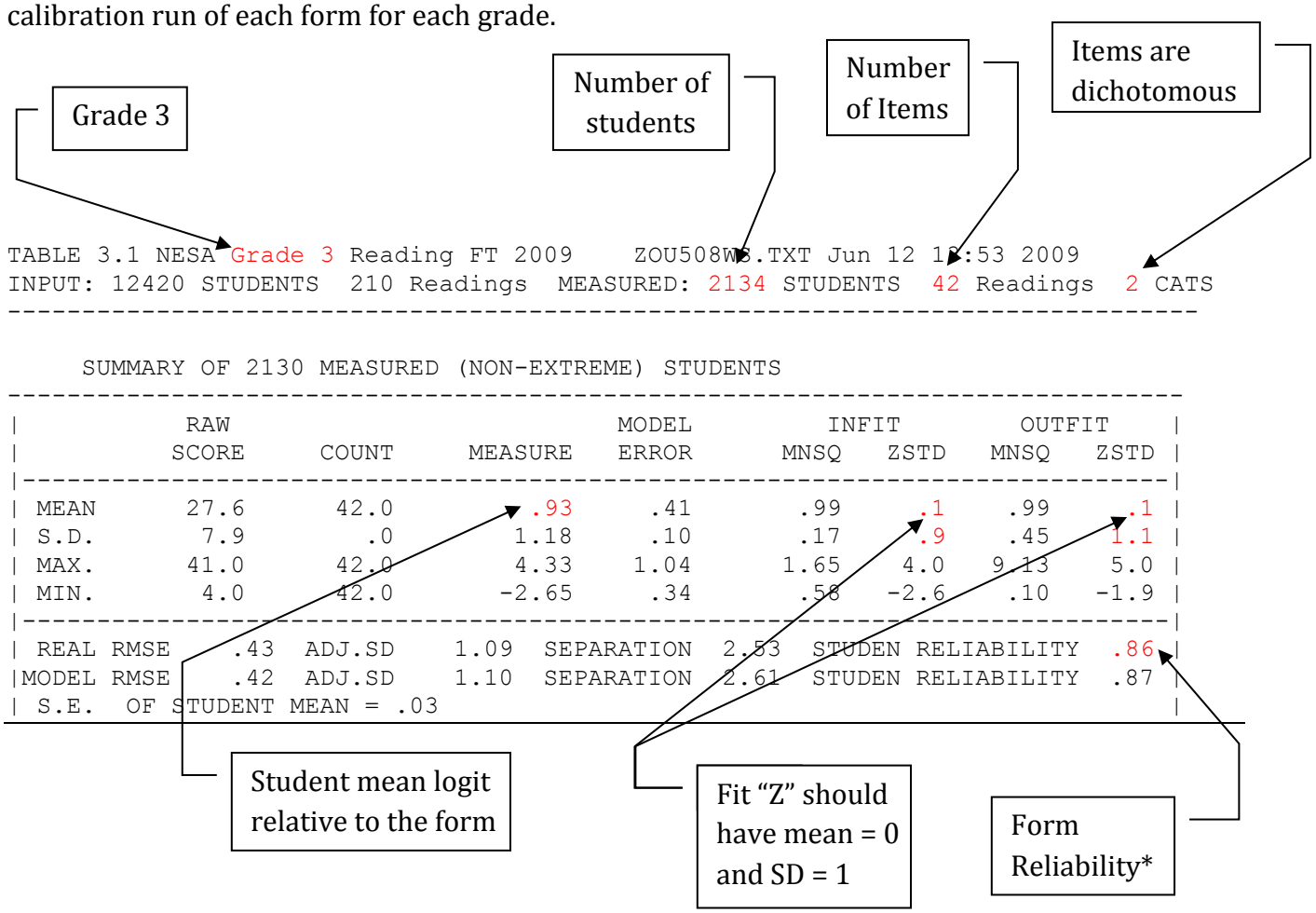
2. $r_v = \sum_{i=1}^{L} \sum_{k=0}^{m_i} k\hat{P}_{vik}$, where $\hat{P}_{vik}$ is defined by (1) with estimates replacing the parameters.

Rasch calibration and scaling have become relatively routine operations. Members of the DRC psychometric staff have been instrumental in the development of the Rasch model and its application over several decades and are intimately familiar with the software for its application.

Appendix J: Reading, Mathematics, and Science Operational Form Calibration Summaries

Winsteps Table 3.1 Interpretation Guide

Tables in this Appendix are taken directly from the Winsteps output file and summarize calibration run of each form for each grade.



*Form Reliability run in Winsteps is run on an anchored file

Reading

Grade 3

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\re03.dat re03o.out  Jun 19 11:40 2014
INPUT: 281 PERSON  25 ITEM  REPORTED: 281 PERSON  25 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 248 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      17.3      25.0      1.1565   .5623       .98     .0    .93    -.1 |
| S.D.       5.5         .0      1.3139   .1760       .12     .7    .27     .8 |
| MAX.      24.0      25.0      3.3994  1.0301      1.38    2.9   1.74    2.9 |
| MIN.       1.0      25.0     -3.3011   .4180       .71   -2.2    .42   -2.2 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5973 TRUE SD  1.1702  SEPARATION  1.96  PERSON RELIABILITY  .79 |
|MODEL RMSE  .5892 TRUE SD  1.1743  SEPARATION  1.99  PERSON RELIABILITY  .80 |
| S.E. OF PERSON MEAN = .0836                                                 |
-------------------------------------------------------------------------------
```

Grade 4

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\re04.dat re04o.out  Jun 19 11:40 2014
INPUT: 332 PERSON  25 ITEM  REPORTED: 332 PERSON  25 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 290 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      15.9      25.0      1.0133   .5175      1.01     .2    .99     .1 |
| S.D.       5.4         .0      1.2282   .1460       .12     .8    .25     .8 |
| MAX.      24.0      25.0      3.5914  1.0293      1.47    3.5   2.31    3.5 |
| MIN.       1.0      25.0     -3.0892   .4173       .66   -2.4    .42   -2.3 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5489 TRUE SD  1.0988  SEPARATION  2.00  PERSON RELIABILITY  .80 |
|MODEL RMSE  .5378 TRUE SD  1.1043  SEPARATION  2.05  PERSON RELIABILITY  .81 |
| S.E. OF PERSON MEAN = .0722                                                 |
-------------------------------------------------------------------------------
```

Grade 5

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\re05.dat re05o.out  Jun 19 11:40 2014
INPUT: 327 PERSON  25 ITEM  REPORTED: 327 PERSON  25 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 287 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      17.0      25.0      1.1524   .5584      1.01     .2   1.02     .2 |
| S.D.       5.5         .0      1.3140   .1928       .09     .6    .26     .7 |
| MAX.      24.0      25.0      3.3943  1.0264      1.27    2.2   2.54    2.1 |
| MIN.       2.0      25.0     -2.4412   .4118       .82   -2.0    .49   -1.9 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5999 TRUE SD  1.1691  SEPARATION  1.95  PERSON RELIABILITY  .79 |
|MODEL RMSE  .5907 TRUE SD  1.1738  SEPARATION  1.99  PERSON RELIABILITY  .80 |
| S.E. OF PERSON MEAN = .0777                                                 |
-------------------------------------------------------------------------------
```

Grade 6

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\re06.dat re06o.out  Jun 19 11:40 2014
INPUT: 319 PERSON  25 ITEM  REPORTED: 319 PERSON  25 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 288 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                        MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      16.9      25.0      1.3342   .5563      1.00     .1   1.01     .1 |
| S.D.       5.6         .0      1.3093   .1928       .09     .7    .22     .7 |
| MAX.      24.0      25.0      3.5754  1.0256      1.34    2.7   1.75    2.8 |
| MIN.       3.0      25.0     -1.7602   .4097       .76   -2.0    .43   -2.0 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5967 TRUE SD  1.1654  SEPARATION  1.95  PERSON RELIABILITY  .79 |
|MODEL RMSE  .5887 TRUE SD  1.1695  SEPARATION  1.99  PERSON RELIABILITY  .80 |
| S.E. OF PERSON MEAN = .0773                                                 |
-------------------------------------------------------------------------------
```

Grade 7

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\re07.dat re07o.out  Jun 19 11:40 2014
INPUT: 334 PERSON  25 ITEM  REPORTED: 334 PERSON  25 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 291 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                        MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      17.4      25.0      1.1428   .5804      1.00     .1    .99     .1 |
| S.D.       5.6         .0      1.3990   .1741       .14     .7    .39     .8 |
| MAX.      24.0      25.0      3.4151  1.0345      1.65    3.8   3.25    3.7 |
| MIN.       1.0      25.0     -3.5254   .4297       .68   -2.0    .34   -1.9 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .6189 TRUE SD  1.2546  SEPARATION  2.03  PERSON RELIABILITY  .80 |
|MODEL RMSE  .6060 TRUE SD  1.2610  SEPARATION  2.08  PERSON RELIABILITY  .81 |
| S.E. OF PERSON MEAN = .0822                                                 |
-------------------------------------------------------------------------------
```

Grade 8

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\re08.dat re08o.out  Jun 19 11:40 2014
INPUT: 340 PERSON  25 ITEM  REPORTED: 340 PERSON  25 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 298 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                        MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      17.0      25.0      1.6152   .5746      1.00     .2    .99     .1 |
| S.D.       5.8         .0      1.4358   .1794       .15     .7    .55     .9 |
| MAX.      24.0      25.0      3.9579  1.0392      1.54    3.0   7.50    3.3 |
| MIN.       1.0      25.0     -2.9541   .4265       .73   -1.8    .35   -1.6 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .6146 TRUE SD  1.2977  SEPARATION  2.11  PERSON RELIABILITY  .82 |
|MODEL RMSE  .6019 TRUE SD  1.3036  SEPARATION  2.17  PERSON RELIABILITY  .82 |
| S.E. OF PERSON MEAN = .0833                                                 |
-------------------------------------------------------------------------------
```

Grade 11

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\re11.dat re11o.out  Jun 19 11:40 2014
INPUT: 296 PERSON  25 ITEM  REPORTED: 296 PERSON  25 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 250 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      18.1      25.0      1.1339   .6139      1.00     .1    .97     .1 |
| S.D.       5.8        .0      1.4486   .2040       .11     .6    .30     .7 |
| MAX.      24.0      25.0      3.1523  1.0322      1.37    2.5   2.27    2.6 |
| MIN.       1.0      25.0     -3.5668   .4176       .70   -2.5    .27   -2.2 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .6601 TRUE SD  1.2895  SEPARATION  1.95  PERSON RELIABILITY  .79 |
|MODEL RMSE  .6470 TRUE SD  1.2961  SEPARATION  2.00  PERSON RELIABILITY  .80 |
| S.E. OF PERSON MEAN = .0918                                                 |
-------------------------------------------------------------------------------
```

Mathematics

Grade 3

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\ma03.dat ma03o.out  Jun 19 11:40 2014
INPUT: 274 PERSON  25 ITEM  REPORTED: 274 PERSON  25 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 252 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      17.2      25.0       .8509   .5714      1.01     .2    .97     .1 |
| S.D.       5.5        .0      1.4191   .1756       .14     .7    .41     .8 |
| MAX.      24.0      25.0      3.2275  1.0430      1.51    2.5   3.29    2.4 |
| MIN.       1.0      25.0     -3.8400   .4341       .69   -1.5    .31   -1.4 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .6124 TRUE SD  1.2801  SEPARATION  2.09  PERSON RELIABILITY  .81 |
|MODEL RMSE  .5978 TRUE SD  1.2870  SEPARATION  2.15  PERSON RELIABILITY  .82 |
| S.E. OF PERSON MEAN = .0896                                                 |
-------------------------------------------------------------------------------
```

Grade 4

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\ma04.dat ma04o.out  Jun 19 11:40 2014
INPUT: 333 PERSON  30 ITEM  REPORTED: 333 PERSON  30 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 294 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      19.9      30.0      1.0587   .5115      1.01     .2    .99     .2 |
| S.D.       6.8        .0      1.3827   .1749       .14     .9    .32     .9 |
| MAX.      29.0      30.0      3.6482  1.0282      1.48    3.3   2.36    3.2 |
| MIN.       1.0      30.0     -3.5259   .3854       .72   -2.3    .43   -2.1 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5511 TRUE SD  1.2681  SEPARATION  2.30  PERSON RELIABILITY  .84 |
|MODEL RMSE  .5406 TRUE SD  1.2726  SEPARATION  2.35  PERSON RELIABILITY  .85 |
| S.E. OF PERSON MEAN = .0808                                                 |
-------------------------------------------------------------------------------
```

Grade 5

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\ma05.dat ma05o.out  Jun 19 11:40 2014
INPUT: 331 PERSON  30 ITEM  REPORTED: 331 PERSON  30 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 284 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                        MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      19.9      30.0       .8719   .5055      1.01     .2    .99     .2 |
| S.D.       6.7        .0      1.3613   .1583       .14     .8    .30     .8 |
| MAX.      29.0      30.0      3.5335  1.0309      1.49    3.0   2.03    2.6 |
| MIN.       1.0      30.0     -3.7285   .3886       .72   -1.7    .26   -1.7 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5411 TRUE SD  1.2492  SEPARATION  2.31  PERSON RELIABILITY  .84 |
|MODEL RMSE  .5297 TRUE SD  1.2540  SEPARATION  2.37  PERSON RELIABILITY  .85 |
| S.E. OF PERSON MEAN = .0809                                                 |
-------------------------------------------------------------------------------
```

Grade 6

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\ma06.dat ma06o.out  Jun 19 11:40 2014
INPUT: 317 PERSON  30 ITEM  REPORTED: 317 PERSON  30 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 295 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                        MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      20.4      30.0      1.0922   .5032      1.01     .2    .98     .1 |
| S.D.       6.1        .0      1.2725   .1661       .13     .8    .26     .9 |
| MAX.      29.0      30.0      3.6385  1.0296      1.43    3.3   1.98    3.5 |
| MIN.       1.0      30.0     -3.5596   .3851       .74   -2.4    .28   -2.2 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5418 TRUE SD  1.1514  SEPARATION  2.12  PERSON RELIABILITY  .82 |
|MODEL RMSE  .5299 TRUE SD  1.1570  SEPARATION  2.18  PERSON RELIABILITY  .83 |
| S.E. OF PERSON MEAN = .0742                                                 |
-------------------------------------------------------------------------------
```

Grade 7

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\ma07.dat ma07o.out  Jun 19 11:40 2014
INPUT: 332 PERSON  30 ITEM  REPORTED: 332 PERSON  30 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 294 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                        MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      20.9      30.0      1.0237   .5165      1.01     .1    .97     .1 |
| S.D.       6.1        .0      1.2678   .1793       .12     .8    .29     .9 |
| MAX.      29.0      30.0      3.4231  1.0271      1.40    2.8   3.73    2.8 |
| MIN.       6.0      30.0     -1.6841   .3858       .74   -2.0    .40   -1.9 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5564 TRUE SD  1.1392  SEPARATION  2.05  PERSON RELIABILITY  .81 |
|MODEL RMSE  .5468 TRUE SD  1.1439  SEPARATION  2.09  PERSON RELIABILITY  .81 |
| S.E. OF PERSON MEAN = .0741                                                 |
-------------------------------------------------------------------------------
```

Grade 8

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\ma08.dat ma08o.out  Jun 19 11:40 2014
INPUT: 345 PERSON  30 ITEM  REPORTED: 345 PERSON  30 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 311 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      20.1      30.0       .9964   .5001      1.00     .1    .96     .1 |
| S.D.       6.4         .0      1.3034   .1578       .13     .7    .26     .8 |
| MAX.      29.0      30.0      3.6347  1.0300      1.36    2.8   2.46    2.7 |
| MIN.       1.0      30.0     -3.6075   .3872       .70   -1.9    .36   -1.8 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5353 TRUE SD  1.1884  SEPARATION  2.22  PERSON RELIABILITY  .83 |
|MODEL RMSE  .5244 TRUE SD  1.1932  SEPARATION  2.28  PERSON RELIABILITY  .84 |
| S.E. OF PERSON MEAN = .0740                                                 |
-------------------------------------------------------------------------------
```

Grade 11

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\ma11.dat ma11o.out  Jun 19 11:40 2014
INPUT: 303 PERSON  30 ITEM  REPORTED: 303 PERSON  30 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 277 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      20.1      30.0       .6312   .5020      1.00     .1    .98     .1 |
| S.D.       6.5         .0      1.3312   .1549       .13     .8    .36     .9 |
| MAX.      29.0      30.0      3.2662  1.0293      1.50    3.3   3.02    3.2 |
| MIN.       1.0      30.0     -4.0286   .3913       .75   -2.1    .41   -2.0 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5358 TRUE SD  1.2186  SEPARATION  2.27  PERSON RELIABILITY  .84 |
|MODEL RMSE  .5254 TRUE SD  1.2232  SEPARATION  2.33  PERSON RELIABILITY  .84 |
| S.E. OF PERSON MEAN = .0801                                                 |
-------------------------------------------------------------------------------
```

Science

Grade 5

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\sc05.dat sc05o.out  Jun 19 11:40 2014
INPUT: 326 PERSON  25 ITEM  REPORTED: 326 PERSON  25 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 280 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                          MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      16.5      25.0       -.0367   .5609      1.02     .2   1.04     .3 |
| S.D.       5.9         .0      1.4229   .1793       .13     .8    .40     .9 |
| MAX.      24.0      25.0      2.3829  1.0317      1.57    3.8   4.32    3.7 |
| MIN.       1.0      25.0     -4.3698   .4207       .73   -2.1    .44   -2.0 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .6027 TRUE SD  1.2889  SEPARATION  2.14  PERSON RELIABILITY  .82 |
|MODEL RMSE  .5889 TRUE SD  1.2953  SEPARATION  2.20  PERSON RELIABILITY  .83 |
| S.E. OF PERSON MEAN = .0852                                                 |
-------------------------------------------------------------------------------
```

Grade 8

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\sc08.dat sc08o.out  Jun 19 11:40 2014
INPUT: 333 PERSON  25 ITEM  REPORTED: 333 PERSON  25 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 288 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                        MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      16.9      25.0      -.0628   .5543      1.02     .2   1.04     .2 |
| S.D.       5.6         .0      1.3231   .1818       .09     .6    .42     .7 |
| MAX.      24.0      25.0      2.2345  1.0317      1.34    2.8   4.78    2.7 |
| MIN.       1.0      25.0     -4.4111   .4131       .80   -1.6    .50   -1.4 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5938 TRUE SD  1.1823  SEPARATION  1.99  PERSON RELIABILITY  .80 |
|MODEL RMSE  .5833 TRUE SD  1.1875  SEPARATION  2.04  PERSON RELIABILITY  .81 |
| S.E. OF PERSON MEAN = .0781                                                 |
-------------------------------------------------------------------------------
```

Grade 11

```
TABLE 3.1 C:\temp\WinStep\NE2014\Alternate\sc11.dat sc11o.out  Jun 19 11:40 2014
INPUT: 296 PERSON  30 ITEM  REPORTED: 296 PERSON  30 ITEM  2 CATS WINSTEPS 3.80.1
-------------------------------------------------------------------------------

     SUMMARY OF 263 MEASURED (NON-EXTREME) PERSON
-------------------------------------------------------------------------------
|          TOTAL                        MODEL         INFIT        OUTFIT    |
|          SCORE     COUNT     MEASURE   ERROR      MNSQ   ZSTD   MNSQ   ZSTD |
|-----------------------------------------------------------------------------|
| MEAN      21.4      30.0       .0818   .5475       .99     .2    .91     .0 |
| S.D.       6.8         .0      1.4143   .1884       .12     .6    .32     .8 |
| MAX.      29.0      30.0      2.3668  1.0259      1.43    2.5   2.51    3.1 |
| MIN.       1.0      30.0     -4.7718   .3827       .72   -1.9    .28   -1.8 |
|-----------------------------------------------------------------------------|
| REAL RMSE  .5875 TRUE SD  1.2865  SEPARATION  2.19  PERSON RELIABILITY  .83 |
|MODEL RMSE  .5790 TRUE SD  1.2904  SEPARATION  2.23  PERSON RELIABILITY  .83 |
| S.E. OF PERSON MEAN = .0874                                                 |
-------------------------------------------------------------------------------
```

Appendix K: Reading Item Bank Difficulties

Grade 3 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	124	281	1.1366A	.1462	1.35	5.0	1.46	3.9	.33	.52	59.8	72.5	.2842	650565
2	201	281	-.0952A	.1601	.93	-.9	.91	-.5	.57	.56	76.8	77.1	-.2593	650567
3	186	281	.1776A	.1546	1.17	2.3	1.35	2.3	.45	.56	73.2	75.4	-.1355	650568
4	149	281	.7082A	.1480	.93	-1.1	.94	-.5	.56	.54	75.2	73.3	.1796	650570
5	163	281	.3102A	.1525	.99	-.1	.90	-.7	.58	.55	72.8	74.7	.2737	650572
6	193	281	.5217A	.1498	.95	-.7	.94	-.5	.55	.54	75.2	73.8	-.6714	650577
7	193	281	.1927A	.1544	.87	-1.9	.75	-1.9	.60	.56	79.9	75.3	-.3338	650578
8	195	281	-.0420A	.1589	.99	-.1	.85	-.9	.55	.56	75.6	76.7	-.1460	650582
9	196	281	-.0952A	.1601	.84	-2.2	.67	-2.2	.64	.56	80.3	77.1	-.1185	650583
10	211	281	-.8265A	.1838	.91	-.9	.64	-1.6	.68	.58	81.9	84.0	.1920	650586
11	204	281	-.3859A	.1679	.91	-1.0	.85	-.7	.61	.57	83.1	79.5	-.0462	650617
12	143	281	.6718A	.1483	1.10	1.5	1.25	2.0	.49	.54	70.5	73.4	.3452	650619
13	223	281	-.9525A	.1895	.96	-.4	1.29	1.1	.57	.58	86.6	85.3	-.0992	650626
14	144	281	1.0660A	.1463	.91	-1.4	.87	-1.2	.56	.52	76.0	72.6	-.0711	650627
15	213	281	-.4722A	.1706	.76	-2.9	.59	-2.3	.67	.57	85.0	80.4	-.2391	650631
16	219	281	-.9189A	.1879	.85	-1.4	.64	-1.5	.67	.58	86.6	84.9	.0164	650753
17	199	281	-.0140A	.1583	.95	-.7	.89	-.6	.56	.56	75.6	76.6	-.2861	673811
18	138	281	.7668A	.1476	.81	-3.2	.71	-2.9	.64	.53	78.3	73.1	.3566	673814
19	135	281	1.0337A	.1463	1.33	4.7	1.52	4.2	.36	.52	64.6	72.6	.1529	673815
20	205	281	-.4283A	.1692	1.11	1.3	1.31	1.5	.49	.57	78.7	80.0	-.0322	675820
21	225	281	-.5409A	.1729	.63	-4.7	.41	-3.6	.70	.57	88.6	81.1	-.6139	675827
22	162	281	.1836A	.1545	1.04	.6	.95	-.3	.58	.56	72.4	75.3	.4236	675828
23	175	281	-.2221A	.1633	.99	-.1	.84	-.9	.67	.57	75.2	78.1	.5367	675831
24	182	281	.1278A	.1555	1.08	1.2	1.09	.7	.51	.56	72.8	75.7	.0153	675833
25	225	281	-.7495A	.1806	.64	-4.1	.39	-3.3	.71	.58	87.8	83.3	-.3924	675835
26	50	140	1.8576	.2103	1.31	3.0	1.82	4.0	.27	.45	62.7	72.9	.0015	691031
27	87	140	.2478	.2172	.89	-1.1	.73	-1.6	.62	.56	75.4	74.8	.0007	691033
28	99	140	-.3661	.2377	1.00	.0	.91	-.3	.58	.59	81.0	79.4	.0005	691034
29	42	140	2.2222	.2174	1.11	1.1	1.23	1.1	.35	.42	73.8	74.9	.0016	691035
30	86	141	.4598	.2129	1.07	.8	.95	-.2	.50	.54	74.2	74.2	-.0009	691036
31	72	140	.9158	.2070	1.00	.0	.95	-.3	.51	.52	70.6	72.4	.0010	691037
32	51	141	1.9979	.2153	1.03	.3	1.08	.5	.44	.47	74.2	74.8	-.0004	691038
33	108	141	-.6751	.2496	1.18	1.3	1.11	.4	.45	.56	79.7	82.0	-.0011	691039
34	64	141	1.4188	.2082	1.17	1.8	1.21	1.2	.42	.51	66.4	72.8	-.0006	691040
35	113	141	-1.0105	.2695	.78	-1.4	.69	-.7	.68	.56	87.5	85.4	-.0012	691041
36	98	141	-.1145	.2264	.88	-1.1	.78	-.9	.62	.55	82.8	77.4	-.0011	691042
37	87	141	.4143	.2136	.80	-2.2	.67	-1.9	.65	.54	82.0	74.4	-.0009	691043
38	99	141	-.1661	.2281	.92	-.7	.86	-.5	.60	.55	77.3	77.8	-.0011	691044
39	98	140	-.3102	.2354	1.00	.0	.97	.0	.58	.58	81.0	78.9	.0005	691045
40	77	140	.6998	.2091	1.41	4.0	1.47	2.8	.33	.54	57.1	72.9	.0009	691046
41	114	140	-1.4316	.3086	.79	-1.0	2.16	2.1	.70	.62	91.3	89.6	.0003	691048
MEAN	145.1	226.2	.1784	.1876	.98	-.2	.99	-.1			76.8	77.2		
S.D.	56.0	68.5	.8278	.0385	.18	2.1	.35	1.9			7.6	4.3		

Grade 4 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	252	332	-.8372A	.1642	.96	-.4	.73	-1.3	.60	.55	81.1	82.5	.0347	650962
2	204	332	-.0699A	.1433	1.11	1.7	1.17	1.2	.53	.55	72.3	75.2	.3245	650965
3	170	332	.8815A	.1343	1.16	2.6	1.47	4.5	.43	.53	65.5	71.6	-.0051	650967
4	231	332	-.4458A	.1517	.99	-.1	1.11	.7	.59	.55	78.7	78.4	.1493	650970
5	232	332	-.0954A	.1437	.94	-.9	.81	-1.4	.56	.55	77.4	75.4	-.2353	650972
6	179	332	.9253A	.1343	.84	-3.0	.76	-2.8	.63	.53	78.0	71.7	-.2133	650973
7	227	332	-.1212A	.1442	.84	-2.6	.67	-2.6	.64	.55	79.7	75.6	-.0958	650974
8	234	332	-.3899A	.1502	.83	-2.5	.65	-2.4	.66	.55	81.1	77.9	.0236	650976
9	212	332	.4250A	.1366	1.21	3.5	1.33	2.8	.40	.54	64.5	72.5	-.3405	650978
10	222	332	-.2018A	.1459	1.16	2.3	1.12	.8	.47	.55	67.9	76.2	.0955	650982
11	165	332	.9253A	.1343	1.17	2.8	1.21	2.2	.43	.53	63.9	71.7	.0414	650984
12	192	332	.2644A	.1383	1.08	1.4	1.11	.9	.51	.54	72.3	73.2	.2139	650986
13	240	332	-.4052A	.1506	.80	-3.0	.62	-2.6	.66	.55	81.1	78.0	-.1030	650990
14	146	332	.9032A	.1343	1.08	1.3	1.05	.6	.48	.53	64.9	71.7	.4075	650993
15	190	332	.7803A	.1346	.99	-.1	.95	-.5	.54	.53	71.6	71.7	-.2717	651003
16	200	332	.6844A	.1349	.87	-2.3	.79	-2.4	.61	.53	75.0	71.8	-.3659	651006
17	145	332	1.3416A	.1353	1.17	2.8	1.23	2.3	.41	.51	68.2	72.3	-.0126	651011
18	205	332	.0778A	.1408	1.09	1.4	1.01	.1	.51	.55	70.6	74.2	.1551	651015
19	167	332	1.1672A	.1346	1.07	1.1	1.05	.6	.49	.52	69.6	72.0	-.2363	651019
20	158	332	.9114A	.1343	1.24	3.9	1.28	2.8	.40	.53	62.8	71.7	.1818	673816
21	205	332	.1843A	.1393	1.26	3.9	1.38	2.9	.40	.54	64.5	73.6	.0465	675849
22	237	332	-.1137A	.1441	.74	-4.4	.60	-3.3	.66	.55	83.1	75.5	-.3341	675852
23	240	332	-.5536A	.1547	.73	-3.7	.50	-3.4	.73	.55	81.4	79.4	.0506	675853
24	209	332	.2321A	.1387	.77	-4.2	.65	-3.4	.68	.54	80.7	73.3	-.0818	675856
25	202	332	-.2644A	.1472	1.35	4.6	1.67	3.7	.45	.55	66.9	76.8	.5585	675870
26	71	166	1.3157	.1869	.96	-.5	1.04	.3	.48	.48	77.0	70.5	.0012	691049
27	94	166	.5161	.1887	1.19	2.4	1.18	1.3	.40	.52	62.2	70.7	.0011	691050
28	116	166	-.3386	.2098	.90	-1.0	1.14	.7	.61	.55	81.1	77.7	.0010	691051
29	116	166	-.3069	.2106	.76	-2.7	.55	-2.2	.70	.55	82.4	76.9	-.0003	691052
30	84	166	.9623	.1944	1.06	.7	1.03	.3	.52	.55	70.3	73.7	-.0001	691053
31	93	166	.6215	.1952	1.01	.1	.89	-.7	.55	.56	72.3	73.5	-.0002	691054
32	106	166	.1144	.2009	.95	-.5	.81	-1.0	.59	.56	76.4	74.6	-.0003	691055
33	136	166	-1.3814	.2639	.97	-.1	1.52	1.2	.54	.54	87.8	87.3	-.0002	691056
34	83	166	1.0000	.1944	.94	-.6	.90	-.8	.57	.55	77.7	73.8	-.0001	691057
35	111	166	-.0913	.2050	1.06	.7	1.39	1.7	.52	.56	71.6	75.5	-.0003	691058
36	81	166	1.0757	.1946	1.15	1.6	1.30	2.1	.49	.55	69.6	73.8	-.0001	691059
37	112	166	-.1678	.2038	1.01	.2	.95	-.2	.53	.54	75.7	76.0	.0010	691060
38	123	166	-.6670	.2243	.97	-.2	.89	-.4	.58	.56	81.1	81.3	.0010	691061
39	93	166	.5517	.1883	1.01	.2	.97	-.1	.50	.51	70.9	70.5	.0011	691062
40	92	166	.5870	.1879	.91	-1.2	.83	-1.3	.56	.51	75.7	70.3	.0011	691063
41	110	166	-.0858	.2012	.82	-2.0	.78	-1.2	.65	.54	81.1	75.1	.0010	691064
MEAN	163.0	267.2	.2417	.1657	1.00	.1	1.00	.0			74.0	74.8		
S.D.	55.9	81.0	.6389	.0326	.15	2.3	.28	2.0			6.6	3.5		

Grade 5 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL CORR.	EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	207	327	.3258A	.1405	1.14	2.2	1.11	1.0	.46	.55	66.3	74.0	-.1525	651121
2	227	327	.1325A	.1434	.98	-.2	1.05	.4	.54	.56	76.9	75.1	-.3990	651122
3	191	327	.0565A	.1447	1.11	1.6	1.10	.7	.56	.56	70.1	75.7	.4413	651126
4	235	327	-.3779A	.1546	.99	-.1	.85	-.8	.57	.58	79.9	79.3	-.0663	651127
5	203	327	.2651A	.1413	.96	-.7	.82	-1.5	.58	.55	73.1	74.3	-.0078	651128
6	216	327	.4045A	.1395	1.04	.7	1.05	.4	.51	.55	69.4	73.6	-.4270	651129
7	208	327	.4268A	.1393	.74	-4.7	.67	-3.2	.68	.55	84.4	73.5	-.2770	651130
8	205	327	.3658A	.1400	.94	-.9	1.04	.4	.57	.55	75.5	73.8	-.1518	651132
9	204	327	-.2267A	.1506	.97	-.3	.80	-1.2	.67	.57	76.5	78.0	.4707	651134
10	185	327	.6759A	.1370	1.44	6.6	1.66	5.3	.31	.54	56.8	72.6	-.0700	651139
11	177	327	.6380A	.1373	.98	-.2	1.07	.6	.55	.54	75.5	72.7	.1201	651142
12	203	327	.0156A	.1454	.97	-.4	.99	-.1	.61	.56	77.6	76.0	.2462	651147
13	214	327	-.1884A	.1497	.88	-1.6	.70	-2.0	.67	.57	79.9	77.6	.2250	651152
14	233	327	-.2824A	.1520	.80	-2.9	.67	-2.2	.67	.57	83.0	78.4	-.1149	651154
15	226	327	-.1302A	.1484	.91	-1.2	.76	-1.6	.60	.57	79.3	77.1	-.1030	651156
16	227	327	-.7392A	.1662	1.45	4.3	2.12	4.0	.45	.59	75.9	82.8	.4942	651161
17	212	327	-.2222A	.1505	1.05	.7	.93	-.4	.60	.57	77.2	77.9	.3017	651174
18	192	327	.1065A	.1438	1.08	1.3	1.34	2.3	.56	.56	74.1	75.3	.3716	673822
19	162	327	.9807A	.1357	.91	-1.6	.86	-1.5	.56	.52	77.9	72.2	.0536	673823
20	176	327	.9229A	.1358	1.12	1.9	1.06	.7	.46	.53	65.6	72.2	-.1483	673824
21	204	327	.3946A	.1397	1.27	4.0	1.30	2.3	.39	.55	63.9	73.6	-.1606	673825
22	245	327	-.7269A	.1658	.93	-.8	1.05	.3	.62	.59	84.7	82.7	.0285	673826
23	206	327	.6382A	.1373	.73	-5.1	.61	-4.3	.69	.54	82.7	72.7	-.4510	675879
24	200	327	.2061A	.1422	.98	-.2	1.02	.2	.58	.56	76.2	74.7	.1131	675881
25	268	327	-1.0007A	.1769	.68	-3.3	.49	-2.4	.67	.59	89.8	85.4	-.4660	675882
26	93	164	.3358	.1918	1.22	2.6	1.20	1.3	.40	.53	59.6	71.4	-.0008	691065
27	90	164	.4453	.1902	1.18	2.3	1.18	1.3	.42	.52	61.0	70.9	-.0008	691066
28	125	164	-1.1087	.2492	.78	-1.5	.52	-1.7	.74	.61	86.3	85.5	-.0008	691067
29	130	163	-.8622	.2508	.79	-1.5	.52	-1.5	.69	.57	87.2	85.3	.0025	691068
30	81	163	1.3293	.1960	1.53	5.1	1.65	3.8	.28	.53	58.8	74.1	.0027	691069
31	92	163	.9038	.1980	1.08	.9	1.02	.2	.52	.55	70.3	74.5	.0027	691070
32	105	163	.3786	.2052	.93	-.7	.93	-.3	.61	.57	78.4	76.3	.0026	691071
33	110	163	.1637	.2099	1.47	4.1	1.43	1.8	.32	.57	61.5	77.3	.0026	691072
34	130	163	-.8622	.2508	.87	-.9	.55	-1.3	.65	.57	85.8	85.3	.0025	691073
35	98	163	.6660	.2005	.84	-1.8	.80	-1.2	.65	.56	77.0	75.1	.0026	691074
36	111	163	.1194	.2110	.84	-1.6	.67	-1.6	.66	.57	79.7	77.5	.0026	691075
37	50	164	1.8793	.1973	1.32	3.3	1.58	3.2	.25	.41	58.9	73.7	-.0006	691076
38	127	164	-1.2375	.2584	1.03	.3	1.21	.7	.59	.62	87.7	86.8	-.0008	691077
39	128	164	-1.3057	.2636	.92	-.4	.71	-.8	.67	.62	88.4	87.5	-.0008	691078
40	93	164	.3358	.1918	.86	-1.8	.76	-1.8	.61	.53	73.3	71.4	-.0008	691079
41	110	164	-.3392	.2094	.86	-1.4	.71	-1.5	.65	.57	79.5	77.2	-.0008	691080
MEAN	168.3	263.2	.0854	.1739	1.01	.1	.99	.0			75.3	76.9		
S.D.	55.5	79.8	.6871	.0390	.21	2.5	.35	2.0			8.9	4.6		

Grade 6 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL CORR.	EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	208	319	.3400A	.1446	1.01	.1	.90	-.7	.54	.53	72.1	75.3	.0834	651187
2	184	319	.7892A	.1400	.97	-.4	.89	-1.0	.55	.53	73.8	73.9	.1111	651188
3	239	319	-.5600A	.1654	1.24	2.6	1.25	1.1	.46	.52	78.6	81.8	.3011	651189
4	226	319	-.1666A	.1540	1.46	5.4	2.79	7.0	.27	.52	70.3	78.4	.2089	651193
5	220	319	.4011A	.1437	.83	-2.7	.72	-2.4	.61	.53	79.7	75.0	-.2408	651199
6	217	319	.6088A	.1414	1.22	3.2	1.18	1.5	.37	.53	64.1	74.3	-.3879	651200
7	182	319	.5800A	.1417	1.20	3.0	1.47	3.5	.45	.53	71.4	74.4	.3616	651248
8	231	319	.2828A	.1454	.93	-1.1	.83	-1.3	.54	.53	77.9	75.6	-.3761	651267
9	256	319	-.2303A	.1556	.81	-2.6	.59	-2.6	.55	.52	80.7	78.9	-.5220	651270
10	230	319	.3885A	.1439	.99	-.2	.92	-.5	.50	.53	76.2	75.1	-.4622	651271
11	257	319	-.5166A	.1639	.73	-3.5	.46	-3.1	.64	.52	85.2	81.4	-.2468	651273
12	223	319	.1017A	.1484	1.07	1.1	1.09	.6	.49	.53	73.4	76.7	.0011	651278
13	175	319	1.2867A	.1383	1.12	1.9	1.15	1.6	.47	.52	68.3	73.4	-.2136	651279
14	192	319	.4150A	.1436	.99	-.1	.95	-.4	.58	.53	75.2	74.9	.3326	651283
15	167	319	.7960A	.1399	1.24	3.6	1.43	3.6	.42	.53	67.2	73.9	.4322	651285
16	171	319	.7960A	.1399	1.15	2.3	1.25	2.2	.47	.53	70.0	73.9	.3557	651287
17	244	319	-.1364A	.1533	1.02	.3	1.11	.7	.46	.53	77.9	78.2	-.2697	651289
18	203	319	.1565A	.1474	.93	-1.0	.88	-.8	.64	.53	78.3	76.3	.3737	673835
19	193	319	.7696A	.1401	.89	-1.9	.83	-1.6	.59	.53	79.7	73.9	-.0472	673839
20	219	319	-.0343A	.1511	.96	-.6	.92	-.5	.60	.53	77.2	77.5	.2302	673840
21	213	319	.4713A	.1429	.86	-2.2	.73	-2.3	.60	.53	80.0	74.7	-.1583	673845
22	226	319	-.2488A	.1561	1.28	3.4	1.34	1.7	.42	.52	73.4	79.0	.2929	675923
23	200	319	.7041A	.1406	.83	-2.9	.73	-2.6	.63	.53	78.6	74.0	-.1225	675929
24	216	319	.4767A	.1428	.76	-4.0	.62	-3.5	.66	.53	81.0	74.7	-.2295	675930
25	223	319	.1898A	.1469	.92	-1.2	.83	-1.2	.57	.53	79.7	76.2	-.0901	675936
26	113	155	-.0360	.2200	.81	-1.8	.70	-1.3	.65	.53	87.1	78.0	-.0005	691081
27	120	155	-.3933	.2327	1.06	.5	.79	-.7	.49	.52	78.4	80.6	-.0005	691082
28	105	155	.3337	.2107	.98	-.2	.88	-.6	.56	.54	77.7	75.9	-.0004	691083
29	104	155	.3780	.2099	.81	-2.0	.67	-1.9	.65	.54	78.4	75.6	-.0004	691084
30	95	155	.7626	.2042	.90	-1.0	.83	-1.0	.61	.55	76.3	74.4	-.0003	691085
31	130	155	-1.0051	.2655	.94	-.4	.77	-.5	.53	.50	87.1	86.2	-.0003	691086
32	123	155	-.5610	.2402	1.02	.2	.93	-.1	.50	.51	81.3	82.0	-.0005	691087
33	97	164	.7246	.1931	.88	-1.4	.81	-1.3	.59	.52	76.8	73.5	.0009	691088
34	131	164	-.7601	.2384	1.12	.9	1.90	2.2	.40	.51	84.8	83.8	.0011	691089
35	143	164	-1.6116	.3051	1.01	.1	.57	-.8	.54	.51	91.4	91.4	.0017	691090
36	105	164	.4205	.1973	.82	-2.1	.71	-1.8	.64	.52	82.8	74.5	.0009	691091
37	69	164	1.7470	.1926	1.25	2.7	1.37	2.6	.33	.49	63.6	73.2	.0012	691092
38	132	164	-.8177	.2418	1.01	.2	1.03	.2	.51	.51	82.8	84.4	.0011	691094
39	113	155	-.0360	.2200	1.04	.4	1.12	.6	.50	.53	79.9	78.0	-.0005	691095
40	114	164	.0571	.2053	.91	-.9	.73	-1.3	.58	.52	79.5	76.4	.0009	691096
41	119	164	-.1601	.2118	.65	-4.0	.48	-2.6	.75	.52	88.7	77.9	.0009	691097
MEAN	173.9	256.8	.1635	.1771	.99	-.2	.98	-.2			77.7	77.2		
S.D.	53.2	77.9	.6273	.0422	.17	2.2	.41	2.1			6.1	3.9		

Grade 7 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	224	334	-.2590A	.1556	.99	-.1	1.04	.3	.65	.61	80.5	80.0	.2579	651304
2	232	334	-.7642A	.1696	1.20	2.0	1.50	2.0	.64	.61	79.1	83.5	.5814	651310
3	146	334	1.3405A	.1379	1.25	3.8	1.35	2.9	.40	.53	64.6	73.6	.2094	651316
4	263	334	-.5151A	.1621	.81	-2.3	.68	-1.8	.64	.61	85.9	81.7	-.5440	651358
5	175	334	.9711A	.1389	1.30	4.3	1.60	4.7	.42	.56	63.6	74.2	.0292	651360
6	229	334	.0418A	.1494	.90	-1.3	.93	-.4	.63	.60	80.8	78.3	-.1643	651362
7	175	334	1.1357A	.1383	1.42	5.9	1.66	5.1	.34	.55	61.6	73.9	-.1325	651364
8	217	334	.0865A	.1487	.76	-3.5	.60	-3.2	.72	.60	84.2	78.0	.0645	651365
9	239	334	-.5685A	.1636	1.05	.6	1.20	1.0	.62	.61	82.2	82.1	.2129	651366
10	219	334	.1965A	.1468	.90	-1.4	.81	-1.4	.63	.59	80.5	77.4	-.0910	651367
11	243	334	-.4627A	.1606	1.41	4.3	1.61	2.8	.42	.61	73.7	81.3	.0010	651377
12	207	334	.2732A	.1457	.74	-3.9	.59	-3.6	.72	.59	83.5	77.0	.0907	651379
13	175	334	.9953A	.1388	.97	-.5	.98	-.2	.55	.55	76.4	74.2	.0053	651381
14	265	334	-1.1056A	.1824	.93	-.7	.66	-1.3	.65	.62	87.9	86.0	.0064	651385
15	222	334	-.0632A	.1514	1.31	3.7	1.41	2.4	.46	.60	71.7	78.9	.1047	651404
16	228	334	-.1559A	.1533	.95	-.6	.87	-.7	.63	.60	80.5	79.4	.0607	651406
17	266	334	-.9692A	.1769	.77	-2.4	.86	-.5	.70	.61	87.2	85.0	-.1706	673846
18	219	334	-.4728A	.1609	1.52	5.3	2.06	4.3	.46	.61	71.7	81.4	.5849	673847
19	286	334	-1.7393A	.2151	.83	-1.2	.59	-1.1	.65	.62	91.6	90.6	-.2316	675944
20	219	334	.5369A	.1424	.74	-4.2	.61	-3.8	.71	.58	83.8	75.7	-.4328	675948
21	239	334	-.3213A	.1570	.83	-2.2	.74	-1.6	.68	.61	86.5	80.4	-.0400	675950
22	265	334	-.7586A	.1695	.65	-4.2	.47	-2.9	.73	.61	90.2	83.4	-.3567	675952
23	166	334	1.4030A	.1379	1.04	.7	1.10	.9	.52	.53	74.1	73.6	-.2235	675956
24	270	334	-1.1114A	.1826	.68	-3.3	.35	-3.2	.74	.62	88.9	86.0	-.1677	675957
25	188	334	.6984A	.1408	1.01	.2	1.00	.1	.56	.57	74.7	75.1	.0490	675960
26	97	169	.4513	.2058	1.28	2.5	1.35	1.8	.49	.62	70.5	76.9	-.0029	691098
27	110	169	-.1253	.2165	.90	-.9	.66	-1.6	.68	.64	79.9	79.4	-.0031	691099
28	114	169	-.3171	.2215	.79	-1.9	.63	-1.6	.73	.64	87.2	80.3	-.0032	691100
29	116	165	.0223	.2105	.90	-.9	.83	-.8	.61	.55	81.1	78.1	.0025	691101
30	108	165	.3610	.2016	1.20	1.9	1.14	.9	.43	.54	66.9	75.9	.0025	691102
31	107	165	.4014	.2008	.88	-1.3	.78	-1.4	.61	.54	77.7	75.6	.0026	691103
32	101	165	.6376	.1964	.97	-.3	.89	-.7	.55	.53	76.4	74.1	.0026	691104
33	132	169	-1.3543	.2659	1.02	.2	.80	-.3	.65	.66	87.2	86.9	-.0035	691105
34	122	169	-.7332	.2354	.82	-1.5	.51	-1.8	.73	.65	83.9	82.5	-.0034	691106
35	117	169	-.4673	.2260	.84	-1.4	.80	-.7	.71	.65	85.9	81.1	-.0033	691107
36	104	165	.5208	.1984	1.29	2.9	1.38	2.3	.37	.54	62.2	74.9	.0026	691108
37	118	165	-.0674	.2134	1.21	1.8	1.26	1.2	.43	.55	73.0	78.7	.0025	691109
38	91	165	1.0131	.1918	1.06	.7	1.06	.5	.50	.52	70.9	72.5	.0026	691110
39	124	165	-.3532	.2239	.72	-2.5	.92	-.2	.71	.55	87.8	80.7	.0025	691111
40	138	169	-1.8301	.2996	.93	-.3	1.01	.2	.67	.66	89.9	90.3	-.0035	691112
41	114	169	-.3171	.2215	.89	-1.0	.69	-1.2	.69	.64	83.2	80.3	-.0032	691113
MEAN	180.2	268.8	-.0914	.1818	.99	-.1	.98	-.1			79.3	79.5		
S.D.	60.8	81.5	.7783	.0380	.22	2.6	.37	2.1			8.1	4.5		

Grade 8 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	171	340	1.3000A	.1371	1.05	.9	1.15	1.3	.54	.56	71.6	74.7	.1848	651407
2	225	340	.5785A	.1449	1.02	.3	.98	-.1	.57	.59	77.1	77.6	-.1623	651408
3	229	340	.6916A	.1432	1.23	3.1	1.52	3.3	.45	.59	69.0	77.0	-.3693	651409
4	237	340	-.1600A	.1616	1.00	.0	.79	-1.0	.68	.61	79.7	82.2	.3159	651412
5	135	340	1.9000A	.1357	1.20	3.1	1.28	2.3	.41	.52	68.1	74.0	.2459	651414
6	215	340	.4400A	.1473	.73	-4.1	.56	-3.2	.75	.60	85.5	78.2	.1958	651416
7	272	340	-.8755A	.1897	.99	-.1	.96	.0	.63	.61	87.7	88.1	.0426	651417
8	222	340	.2140A	.1518	.92	-1.1	.77	-1.4	.68	.60	80.6	79.6	.2761	651418
9	216	340	.8000A	.1417	1.22	3.0	1.32	2.2	.47	.59	69.7	76.6	-.1917	651421
10	211	340	.8014A	.1417	.94	-.9	.82	-1.4	.61	.59	77.7	76.6	-.0880	651426
11	142	340	1.4400A	.1363	1.28	4.1	1.30	2.5	.42	.55	64.2	74.5	.5771	651427
12	242	340	.4700A	.1467	.91	-1.2	.74	-1.7	.61	.60	78.1	78.1	-.4575	651430
13	170	340	1.5077A	.1361	1.08	1.3	1.12	1.1	.52	.55	70.6	74.3	-.0037	651433
14	184	340	1.6980A	.1357	1.04	.6	1.06	.6	.54	.54	74.8	74.1	-.4494	651434
15	216	340	.4593A	.1469	.81	-2.8	.60	-2.9	.71	.60	80.6	78.1	.1551	651435
16	226	340	.4593A	.1469	.72	-4.3	.54	-3.5	.73	.60	85.8	78.1	-.0627	651436
17	218	340	.7773A	.1420	.81	-2.9	.73	-2.2	.67	.59	81.9	76.7	-.2114	651441
18	238	340	.3146A	.1497	.72	-4.1	.52	-3.4	.72	.60	84.8	79.0	-.1956	651443
19	245	340	-.4091A	.1698	1.28	2.8	1.26	1.1	.56	.61	80.0	84.2	.3723	651445
20	204	340	.6516A	.1438	.94	-.8	.87	-.9	.63	.59	79.4	77.2	.2066	651455
21	245	340	-.4987A	.1731	.96	-.4	.80	-.7	.74	.61	83.2	85.0	.4626	673876
22	189	340	1.2878A	.1371	1.12	1.8	1.02	.3	.50	.56	70.3	74.8	-.1402	673884
23	227	340	.8392A	.1412	1.08	1.2	1.09	.7	.53	.58	74.2	76.4	-.4741	675966
24	270	340	-.4094A	.1698	.84	-1.8	.60	-1.8	.63	.61	87.4	84.2	-.3740	675969
25	278	340	-1.2699A	.2121	1.04	.3	1.75	1.7	.65	.62	90.0	91.0	.2171	675976
26	102	171	.7410	.2025	.94	-.6	1.02	.2	.63	.61	75.7	76.5	.0001	691114
27	117	171	.0796	.2197	.71	-2.9	.49	-2.3	.76	.63	86.8	80.1	-.0001	691115
28	64	171	2.1980	.1957	1.20	2.1	1.34	1.7	.41	.51	69.1	74.4	.0004	691116
29	119	171	-.0184	.2232	1.34	2.7	1.57	1.8	.46	.63	74.3	80.9	-.0001	691117
30	137	171	-1.1364	.2874	.81	-1.0	.55	-.9	.73	.65	91.4	89.8	-.0002	691118
31	89	169	1.4495	.1912	1.08	.9	.99	.0	.49	.54	69.6	74.4	.0029	691119
32	95	169	1.2283	.1931	1.62	5.8	1.71	3.7	.23	.55	56.3	75.0	.0028	691120
33	56	169	2.6591	.1964	1.24	2.5	1.42	1.9	.33	.45	70.3	75.6	.0032	691121
34	100	169	1.0399	.1954	.99	-.1	.92	-.4	.56	.56	75.3	75.8	.0027	691122
35	135	169	-.5740	.2491	.90	-.6	.51	-1.4	.64	.57	84.2	85.8	.0023	691123
36	128	169	-.1769	.2289	.83	-1.4	.56	-1.5	.67	.57	85.4	82.6	.0024	691124
37	117	169	.3484	.2101	.81	-1.8	.60	-1.9	.68	.57	84.2	79.3	.0025	691125
38	97	169	1.1535	.1940	1.03	.4	.97	-.1	.53	.55	72.8	75.3	.0028	691126
39	84	171	1.4439	.1944	1.04	.4	.97	-.1	.55	.57	73.7	74.5	.0002	691127
40	122	171	-.1718	.2293	1.25	1.9	2.19	3.1	.50	.64	78.3	82.0	-.0001	691128
41	80	171	1.5946	.1939	.99	-.1	1.01	.1	.57	.56	73.7	74.3	.0003	691129
MEAN	172.4	273.7	.6065	.1753	1.02	.1	1.00	-.1			77.4	78.7		
S.D.	64.1	82.9	.8809	.0369	.19	2.2	.39	1.9			7.5	4.5		

Grade 11 Reading

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	203	296	.2269A	.1562	.86	-1.7	1.36	2.3	.63	.59	81.7	78.3	-.2482	651337
2	193	296	.2170A	.1564	1.11	1.4	1.00	.1	.54	.59	75.7	78.3	.0153	651356
3	214	296	-.3169A	.1682	1.11	1.3	1.08	.5	.55	.60	77.6	81.1	.0006	651410
4	219	296	-.7350A	.1812	.93	-.7	.91	-.3	.70	.61	84.0	83.8	.2799	651424
5	233	296	-.5842A	.1760	.88	-1.2	.71	-1.4	.62	.61	85.1	82.7	-.3415	651429
6	205	296	-.2375A	.1661	.87	-1.5	.74	-1.5	.69	.60	83.6	80.7	.1689	651437
7	180	296	.8636A	.1477	1.13	1.9	1.13	1.1	.48	.55	70.1	75.2	-.3199	651444
8	178	296	.7339A	.1490	.88	-1.8	.81	-1.6	.62	.56	78.7	75.8	-.1478	651448
9	198	296	.1906A	.1569	1.13	1.5	1.14	.9	.52	.59	75.0	78.5	-.0826	651450
10	199	296	-.1657A	.1644	.95	-.6	.82	-1.0	.65	.60	82.1	80.3	.2519	651463
11	245	296	-1.4295A	.2128	.91	-.6	.82	-.4	.67	.62	88.8	89.0	.0477	651465
12	149	296	1.3954A	.1448	1.13	2.0	1.26	1.9	.43	.51	70.9	73.1	-.1741	651466
13	173	296	.3253A	.1545	1.06	.8	.96	-.3	.58	.58	76.1	77.8	.3713	651467
14	242	296	-.8259A	.1845	.73	-2.9	.43	-2.8	.69	.61	88.4	84.4	-.4506	651468
15	196	296	-.1680A	.1644	1.33	3.4	1.59	2.9	.49	.60	72.8	80.3	.3296	651478
16	185	296	-.1144A	.1632	1.04	.5	1.03	.2	.65	.60	79.5	80.1	.5401	651480
17	205	296	-.2977A	.1677	1.08	.9	1.05	.3	.60	.60	78.7	81.0	.2300	673895
18	241	296	-.6043A	.1767	.87	-1.3	.77	-1.0	.59	.61	85.8	82.8	-.6419	673899
19	229	296	-.6689A	.1789	.67	-3.8	.65	-1.6	.76	.61	91.0	83.3	-.1098	673900
20	190	296	.0599A	.1594	1.46	4.9	2.03	5.0	.41	.59	70.1	79.1	.2463	675977
21	232	296	-.5637A	.1754	.68	-3.8	.50	-2.7	.73	.61	88.4	82.6	-.3260	675978
22	246	296	-1.3898A	.2106	.77	-1.9	.42	-2.1	.72	.62	90.7	88.7	-.0397	675979
23	216	296	-.3855A	.1701	.80	-2.4	.55	-2.6	.71	.60	84.3	81.4	.0123	675981
24	219	296	-.3858A	.1701	.69	-3.8	.45	-3.4	.75	.60	87.7	81.4	-.0773	675987
25	223	296	-.6473A	.1781	.81	-2.1	.58	-2.1	.72	.61	85.8	83.1	.0668	675988
26	97	148	.2917	.2162	.87	-1.2	.78	-1.2	.62	.56	80.9	77.4	.0017	691130
27	46	148	2.3695	.2057	1.17	1.8	1.54	2.4	.26	.37	69.1	73.9	.0025	691131
28	96	148	.1677	.2248	1.33	2.6	1.21	1.0	.46	.61	68.9	79.0	-.0009	691132
29	62	148	1.7574	.2144	1.19	1.9	1.39	1.6	.42	.53	68.2	75.2	-.0001	691133
30	59	148	1.8960	.2156	1.67	5.8	2.44	4.3	.22	.52	59.8	75.5	-.0001	691134
31	107	148	-.4190	.2385	1.05	.4	.94	-.1	.59	.61	78.0	80.3	-.0011	691135
32	119	148	-1.1819	.2699	.79	-1.5	.43	-1.6	.70	.59	86.4	85.0	-.0014	691136
33	121	148	-1.3323	.2786	1.00	.1	.62	-.8	.60	.58	86.4	86.2	-.0014	691137
34	98	148	.0659	.2267	.89	-.9	.70	-1.4	.66	.61	81.8	79.2	-.0009	691138
35	116	148	-.9722	.2593	.85	-1.1	.88	-.2	.66	.59	84.8	83.4	-.0013	691139
36	97	148	.2917	.2162	.94	-.6	.86	-.7	.59	.56	76.5	77.4	.0017	691140
37	116	148	-.7726	.2663	1.04	.3	1.23	.7	.59	.62	86.8	86.0	.0014	691141
38	115	148	-.7030	.2617	1.10	.7	1.12	.5	.57	.62	84.6	85.4	.0014	691142
39	58	148	1.8821	.1985	1.44	4.9	1.92	4.0	.16	.42	58.8	71.1	.0023	691143
40	102	148	.0497	.2244	1.06	.5	.97	-.1	.55	.58	76.5	79.1	.0017	691144
41	124	148	-1.4489	.3220	1.11	.5	2.05	1.8	.57	.66	91.2	91.1	.0013	691145
MEAN	164.5	238.2	-.0870	.1969	1.01	.1	1.02	.0			79.8	80.7		
S.D.	60.2	72.2	.9159	.0419	.22	2.2	.47	1.9			8.0	4.3		

Appendix L: Mathematics Item Bank Difficulties

Grade 3 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	231	274	-1.8299A	.2270	.98	-.1	1.28	.8	.56	.59	90.9	90.5	-.1127	650573
2	180	274	-.0768A	.1560	1.13	1.7	1.57	3.4	.47	.55	74.4	76.1	-.1080	650590
3	197	274	-.8407A	.1770	1.19	1.9	1.21	1.0	.51	.58	80.3	82.5	.2018	650591
4	232	274	-2.2120A	.2547	.96	-.1	.45	-1.5	.69	.60	91.3	92.7	.2138	650592
5	160	274	.7658A	.1464	1.07	1.1	1.41	2.8	.49	.51	72.8	72.2	-.4705	650596
6	120	274	1.2938A	.1467	1.41	5.9	1.58	3.2	.28	.47	59.4	72.3	-.1365	650597
7	216	274	-1.4362A	.2036	1.07	.6	.80	-.6	.61	.59	85.0	87.5	.1727	650600
8	171	274	.0455A	.1538	.90	-1.5	1.00	.1	.60	.55	80.3	75.3	-.0110	650602
9	188	274	-.3470A	.1620	1.08	1.0	1.01	.1	.51	.56	77.6	78.2	-.0439	650603
10	183	274	-.4383A	.1643	.91	-1.0	.70	-1.9	.65	.56	78.0	78.9	.1787	650604
11	164	274	-.0823A	.1561	.96	-.5	.85	-1.0	.61	.55	77.6	76.2	.2801	650605
12	164	274	.2947A	.1502	1.04	.7	1.06	.5	.51	.54	73.6	73.9	-.0967	650608
13	169	274	.1656A	.1519	.87	-2.0	.79	-1.6	.61	.54	78.0	74.6	-.0838	650609
14	131	274	.6520A	.1469	1.34	5.0	1.62	4.1	.33	.52	63.0	72.5	.2652	650611
15	179	274	-.2023A	.1586	.95	-.6	.98	-.1	.59	.56	77.6	77.1	.0429	650612
16	180	274	-.0275A	.1551	.87	-1.8	.75	-1.8	.61	.55	79.1	75.8	-.1574	650613
17	205	274	-.8500A	.1774	.84	-1.7	.65	-1.8	.66	.58	85.0	82.6	-.0332	650615
18	150	274	.5628A	.1475	1.12	1.9	1.09	.7	.44	.52	68.5	72.8	-.0517	650618
19	149	274	.5136A	.1479	1.04	.6	1.04	.4	.50	.52	70.5	73.0	.0188	650628
20	149	274	.4829A	.1482	1.09	1.3	1.03	.3	.48	.53	67.3	73.1	.0493	650661
21	212	274	-.9923A	.1828	.84	-1.6	.92	-.3	.63	.58	87.0	83.9	-.1266	650662
22	231	274	-1.9190A	.2330	.71	-1.9	.35	-2.3	.72	.59	92.5	91.0	-.0233	650667
23	193	274	-.8375A	.1769	.93	-.7	.68	-1.7	.69	.58	81.9	82.5	.3126	675834
24	131	274	.9271A	.1460	1.06	1.0	1.04	.4	.46	.50	69.3	72.0	-.0074	676126
25	188	274	-.2957A	.1607	.96	-.5	.86	-.8	.57	.56	77.6	77.8	-.0955	676130
26	79	134	.1377	.2202	.74	-2.9	.57	-2.3	.70	.57	84.0	75.3	.0032	690920
27	99	134	-.9795	.2610	.75	-1.8	.47	-1.9	.73	.61	87.2	83.9	.0028	690921
28	90	140	.0263	.2136	.99	-.1	.94	-.3	.53	.52	73.6	75.0	.0002	690922
29	78	140	.5460	.2039	.91	-1.1	.84	-1.1	.56	.50	76.0	71.9	.0002	690923
30	102	140	-.5685	.2340	.88	-1.0	.66	-1.5	.62	.54	81.4	80.0	.0001	690924
31	61	140	1.2386	.2018	1.33	3.7	1.52	3.3	.26	.46	58.9	70.7	.0002	690925
32	33	134	2.3055	.2335	1.30	2.4	1.80	1.9	.24	.40	72.8	78.5	.0034	690926
33	76	140	.6288	.2030	.82	-2.2	.74	-2.0	.59	.50	78.3	71.5	.0002	690927
34	63	140	1.1573	.2014	1.02	.3	1.08	.6	.42	.47	71.3	70.6	.0002	690928
35	78	140	.5460	.2039	.99	-.1	.97	-.2	.51	.50	74.4	71.9	.0002	690929
36	61	140	1.2386	.2018	1.06	.7	1.07	.5	.42	.46	66.7	70.7	.0002	690930
37	77	134	.2338	.2184	.95	-.5	.83	-.8	.59	.56	77.6	74.9	.0032	690931
38	62	134	.9218	.2120	.98	-.2	.85	-.6	.53	.52	71.2	73.4	.0034	690932
39	37	134	2.0936	.2269	1.12	1.1	1.23	.7	.34	.42	75.2	77.0	.0035	690933
40	85	134	-.1619	.2274	1.09	.9	.93	-.2	.54	.58	70.4	77.1	.0031	690934
41	64	134	.8318	.2122	.85	-1.7	.73	-1.2	.60	.52	79.2	73.4	.0034	691213
MEAN	137.0	220.5	.0857	.1879	1.00	.2	.97	-.1			76.5	77.1		
S.D.	58.8	66.9	.9847	.0342	.16	1.8	.33	1.6			7.8	5.7		

Grade 4 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL CORR.	EXP.	EXACT MATCH OBS%	EXP%	DISPLACE	ITEM
1	197	333	-.2918A	.1482	1.20	2.7	1.28	1.6	.58	.57	71.9	77.2	.6309	650755
2	229	333	.2099A	.1401	.86	-2.3	.87	-1.0	.62	.57	77.9	74.5	-.5564	650757
3	237	333	-.6110A	.1562	1.05	.7	1.07	.4	.56	.58	80.3	79.8	.1089	650759
4	253	333	-1.1606A	.1764	.94	-.6	.62	-1.6	.69	.58	82.6	85.5	.2563	650762
5	221	333	.0566A	.1421	.86	-2.3	.85	-1.1	.63	.57	78.3	75.1	-.2141	650763
6	208	333	.2814A	.1393	1.01	.1	.91	-.7	.55	.56	71.9	74.2	-.1695	650766
7	144	333	.9961A	.1358	.95	-.8	.92	-.8	.55	.54	75.3	73.0	.3226	650767
8	245	333	-.5824A	.1554	.92	-1.0	.80	-1.0	.61	.57	80.9	79.5	-.1232	650768
9	244	333	-.4676A	.1523	.84	-2.2	.64	-2.2	.63	.57	80.6	78.6	-.2172	650770
10	202	333	.3913A	.1382	1.07	1.1	1.12	1.0	.52	.56	72.2	73.8	-.1602	650772
11	202	333	.4012A	.1381	.86	-2.3	.78	-2.0	.63	.56	77.6	73.8	-.1703	650774
12	126	333	1.1803A	.1360	1.58	8.1	1.92	7.0	.21	.53	56.2	73.2	.4774	650777
13	168	333	1.0369A	.1358	.98	-.3	.95	-.5	.55	.54	73.6	73.1	-.1616	650783
14	231	333	-1.2313A	.1797	1.54	4.4	1.79	2.4	.60	.58	75.3	86.2	.8679	650787
15	178	333	.4577A	.1377	1.08	1.3	1.07	.6	.53	.56	70.9	73.6	.2354	650789
16	178	333	1.0421A	.1358	1.22	3.5	1.26	2.3	.45	.54	67.6	73.1	-.3532	650790
17	244	333	-.9648A	.1682	.94	-.6	.65	-1.6	.69	.58	82.9	83.4	.2975	650791
18	238	333	-.4648A	.1523	.88	-1.7	.97	-.1	.62	.57	83.9	78.5	-.0671	650792
19	205	333	.4577A	.1377	.83	-3.0	.76	-2.2	.65	.56	79.9	73.6	-.2890	650793
20	190	333	.2577A	.1395	.95	-.7	.83	-1.4	.60	.56	73.6	74.3	.2113	650928
21	165	333	1.0955A	.1358	1.04	.6	1.08	.8	.52	.54	72.9	73.1	-.1646	650931
22	174	333	.6062A	.1367	1.10	1.7	1.02	.2	.50	.56	67.9	73.3	.1600	673362
23	266	333	-.8530A	.1640	.68	-4.1	.45	-3.0	.67	.58	88.3	82.3	-.4779	676142
24	239	333	-.5058A	.1533	.86	-1.9	.77	-1.2	.64	.57	81.6	78.9	-.0492	676143
25	196	333	.4808A	.1375	.96	-.7	.90	-.8	.58	.56	74.9	73.6	-.1324	676145
26	203	333	.1309A	.1410	.93	-1.1	.90	-.7	.61	.57	77.9	74.8	.0864	676146
27	219	333	-.6465A	.1573	1.23	2.7	1.17	.8	.58	.58	74.9	80.1	.5476	676155
28	175	333	.6464A	.1365	1.09	1.4	1.06	.6	.51	.55	70.9	73.2	.1007	676157
29	251	333	-.2905A	.1482	.84	-2.4	.83	-1.0	.59	.57	82.6	77.2	-.5994	676158
30	216	333	.3696A	.1384	.79	-3.6	.68	-3.0	.66	.56	80.3	73.9	-.4292	676160
31	90	165	.6304	.1956	1.24	2.6	1.27	1.7	.44	.56	62.1	72.8	-.0002	690935
32	85	165	.8203	.1943	.93	-.8	.87	-.9	.58	.56	77.2	72.4	-.0002	690936
33	98	165	.3191	.1994	.89	-1.3	.81	-1.1	.63	.58	79.3	74.0	-.0002	690937
34	68	165	1.4628	.1959	1.11	1.3	1.23	1.6	.46	.52	70.3	73.1	-.0001	690938
35	133	165	-1.4844	.2823	.85	-.8	.70	-.5	.68	.62	89.7	89.0	.0000	690939
36	113	165	-.3183	.2151	.94	-.5	.81	-.7	.63	.59	81.4	77.9	-.0002	690940
37	73	168	1.2888	.1912	1.10	1.1	1.11	.7	.45	.52	68.8	74.0	.0026	690941
38	62	168	1.6985	.1953	1.13	1.4	1.26	1.3	.41	.50	72.1	74.8	.0027	690942
39	119	168	-.4597	.2104	.82	-1.9	.68	-1.4	.66	.55	79.2	77.9	.0019	690943
40	94	168	.5268	.1916	1.02	.3	1.06	.4	.54	.55	73.4	73.8	.0023	690944
41	68	168	1.4729	.1927	1.35	3.5	1.44	2.3	.33	.51	61.7	74.3	.0026	690945
42	96	168	.4532	.1922	1.00	.0	.89	-.6	.55	.55	73.4	73.9	.0022	690946
43	87	168	.7816	.1903	1.37	3.8	1.46	2.7	.34	.54	64.9	73.6	.0024	690947
44	95	165	.4373	.1977	1.11	1.3	1.11	.7	.51	.57	69.0	73.5	-.0002	690948
45	77	165	1.1214	.1940	1.26	2.8	1.37	2.5	.41	.54	64.1	72.4	-.0002	690949
46	126	168	-.7866	.2229	.93	-.6	1.01	.2	.59	.55	83.1	80.8	.0019	690950
MEAN	168.0	275.1	.2172	.1664	1.02	.2	1.00	.0			75.1	76.1		
S.D.	62.5	79.3	.7786	.0319	.19	2.3	.29	1.8			7.0	4.0		

Grade 5 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	228	331	-.1999A	.1439	.92	-1.2	.92	-.5	.59	.56	76.9	76.1	-.2262	650955
2	169	331	.6257A	.1346	1.25	4.0	1.26	2.3	.39	.53	65.7	73.0	.0999	650985
3	207	331	-.0309A	.1410	.97	-.5	.94	-.4	.58	.56	78.2	75.2	.0487	650987
4	224	331	-.2225A	.1443	.85	-2.3	.74	-1.8	.63	.56	80.9	76.2	-.1126	650991
5	153	331	1.0293A	.1338	1.06	1.0	1.01	.1	.48	.51	72.3	72.4	-.0172	651002
6	188	331	.6017A	.1347	.89	-1.9	.82	-1.8	.60	.53	75.2	73.0	-.2247	651004
7	260	331	-1.2349A	.1757	1.12	1.2	1.25	1.0	.51	.58	84.2	85.7	-.0039	651007
8	215	331	.1053A	.1391	.74	-4.6	.59	-3.6	.69	.55	82.8	74.6	-.2553	651009
9	221	331	-.4217A	.1485	1.08	1.1	1.12	.7	.55	.56	72.9	77.5	.1576	651010
10	254	331	-1.1876A	.1736	.99	-.1	.64	-1.5	.64	.58	82.8	85.2	.1302	651013
11	263	331	-1.4569A	.1866	1.03	.3	.78	-.7	.61	.58	86.5	87.8	.1266	651017
12	187	331	.4768A	.1354	1.14	2.2	1.19	1.7	.46	.54	66.3	73.3	-.0802	651021
13	187	331	.1897A	.1381	1.06	.9	.95	-.4	.54	.55	70.3	74.3	.2101	651022
14	196	331	.2869A	.1370	.83	-2.9	.70	-2.8	.64	.55	79.2	73.9	-.0588	651023
15	231	331	-.5881A	.1527	.84	-2.2	.66	-2.0	.68	.57	81.2	79.0	.1055	651028
16	141	331	.9270A	.1338	1.12	2.0	1.11	1.1	.45	.52	68.6	72.4	.2992	651030
17	182	331	.8527A	.1338	.96	-.6	.99	-.1	.55	.52	74.6	72.5	-.3640	651031
18	214	331	-.1718A	.1434	.84	-2.5	.73	-2.0	.66	.56	82.2	76.0	.0498	651040
19	178	331	.7171A	.1342	1.09	1.5	1.02	.3	.47	.53	65.7	72.8	-.1552	651045
20	248	331	-1.1097A	.1703	1.00	.1	.79	-.8	.64	.57	82.2	84.5	.2180	673364
21	217	331	-.3082A	.1460	.94	-.8	.82	-1.1	.62	.56	79.2	76.7	.1266	673365
22	133	331	1.6006A	.1369	1.02	.4	1.00	.0	.49	.48	72.6	73.4	-.2237	673369
23	233	331	-1.1307A	.1712	1.36	3.3	1.41	1.5	.56	.57	77.9	84.7	.6081	676190
24	256	331	-.7931A	.1587	.77	-3.0	.60	-2.2	.64	.57	86.5	81.1	-.3405	676192
25	213	331	-.1937A	.1438	.88	-1.8	.82	-1.2	.64	.56	81.8	76.1	.0929	676194
26	214	331	.3519A	.1364	.93	-1.2	.80	-1.8	.58	.54	74.3	73.7	-.4865	676196
27	228	331	-.9007A	.1624	1.03	.4	.74	-1.2	.69	.57	78.2	82.3	.4904	676197
28	228	331	-.6804A	.1553	1.13	1.6	1.03	.2	.56	.57	75.6	79.9	.2679	676200
29	231	331	-.3782A	.1475	.77	-3.5	.61	-2.6	.68	.56	83.8	77.2	-.1109	676201
30	201	331	.1641A	.1384	.91	-1.4	1.07	.6	.60	.55	76.9	74.4	-.0311	676202
31	85	167	.4028	.1853	.91	-1.2	.90	-.8	.56	.51	72.7	70.6	.0007	690951
32	81	167	.5396	.1846	.91	-1.3	.82	-1.6	.56	.50	73.3	70.4	.0007	690952
33	66	167	1.0516	.1859	1.76	8.1	2.01	6.5	.03	.47	40.0	70.7	.0008	690953
34	45	167	1.8217	.1999	1.33	3.2	1.67	3.2	.20	.41	68.0	75.2	.0008	690954
35	59	164	2.0117	.1970	1.21	2.3	1.37	1.8	.33	.47	70.6	74.3	.0028	690955
36	76	164	1.3732	.1921	1.37	3.9	1.64	3.3	.32	.52	61.4	73.4	.0026	690956
37	108	164	.1416	.2054	.95	-.4	.88	-.5	.59	.57	81.7	77.6	.0022	690957
38	124	164	-.6032	.2295	.91	-.7	.70	-.9	.62	.57	85.6	81.9	.0020	690958
39	81	164	1.1886	.1923	1.72	6.9	1.97	4.8	.17	.53	50.3	73.7	.0026	690959
40	98	164	.5465	.1978	1.23	2.4	1.35	1.8	.44	.56	67.3	75.9	.0023	690960
41	70	164	1.5952	.1928	1.07	.8	1.11	.7	.44	.50	71.9	73.4	.0027	690961
42	108	164	.1416	.2054	1.34	3.1	1.95	3.5	.38	.57	68.6	77.6	.0022	690962
43	87	167	.3339	.1859	.92	-1.1	.88	-.9	.56	.51	73.3	70.7	.0007	690963
44	87	167	.3339	.1859	.91	-1.2	.86	-1.2	.57	.51	76.0	70.7	.0007	690964
45	65	167	1.0862	.1862	1.14	1.7	1.13	1.1	.39	.47	66.0	70.7	.0008	690965
46	53	167	1.5146	.1925	1.47	4.9	1.64	3.6	.15	.43	57.3	72.8	.0008	690966
MEAN	165.1	273.4	.2261	.1641	1.06	.4	1.04	.1			73.9	76.0		
S.D.	68.2	78.8	.8621	.0262	.22	2.6	.37	2.1			9.2	4.4		

Grade 6 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	246	317	-.8636A	.1660	.88	-1.3	.56	-2.3	.64	.49	82.0	83.4	.1554	651184
2	208	317	-.0371A	.1423	1.27	3.9	1.26	1.8	.34	.49	65.3	74.9	.1629	651322
3	260	317	-.9579A	.1700	1.00	.0	.94	-.2	.45	.48	85.3	84.4	-.1551	651323
4	242	317	-.7628A	.1621	.90	-1.2	.63	-2.0	.62	.49	81.0	82.3	.1552	651325
5	149	317	1.6188A	.1358	1.11	1.7	1.28	2.3	.43	.46	70.0	73.3	-.4153	651327
6	150	317	1.2114A	.1335	1.23	3.7	1.30	2.8	.33	.48	62.0	72.0	-.0332	651328
7	148	317	.8917A	.1333	1.07	1.2	1.14	1.4	.45	.49	70.0	71.8	.3225	651339
8	237	317	-.8335A	.1648	1.25	2.6	1.27	1.2	.44	.49	78.3	83.1	.3492	651340
9	247	317	-.3878A	.1502	1.00	.0	1.10	.6	.40	.49	79.0	77.9	-.3669	651341
10	203	317	.2747A	.1375	1.32	5.0	1.45	3.4	.27	.49	62.3	73.3	-.0578	651343
11	168	317	.8281A	.1335	1.02	.4	1.00	.0	.47	.49	72.7	71.8	.0305	651344
12	207	317	-.0832A	.1432	1.37	5.2	1.78	4.5	.29	.49	61.3	75.2	.2297	651345
13	269	317	-1.5607A	.2028	.98	-.1	.59	-1.4	.58	.48	89.3	90.2	.1492	651346
14	257	317	-.9881A	.1713	.87	-1.3	.68	-1.5	.57	.48	85.0	84.8	-.0288	651350
15	221	317	.0312A	.1411	1.02	.3	.92	-.6	.46	.49	70.3	74.5	-.1768	651351
16	172	317	.6168A	.1344	1.06	1.0	1.10	.9	.46	.49	69.0	72.0	.1721	651353
17	201	317	.0749A	.1404	.94	-1.0	.90	-.7	.56	.49	77.3	74.3	.1856	651354
18	205	317	-.0116A	.1418	.92	-1.3	.73	-2.2	.59	.49	76.3	74.7	.1960	651355
19	195	317	.1599A	.1391	.90	-1.6	.84	-1.3	.59	.49	79.3	73.8	.2134	651359
20	195	317	.2020A	.1385	1.15	2.5	1.25	1.9	.41	.49	70.3	73.6	.1706	651382
21	198	317	.3908A	.1363	.97	-.4	.90	-.9	.50	.49	72.7	72.8	-.0795	651384
22	205	317	.3908A	.1363	.79	-3.9	.69	-3.1	.62	.49	80.3	72.8	-.2166	651392
23	223	317	.1576A	.1391	.76	-4.4	.62	-3.4	.62	.49	82.7	73.8	-.3521	651394
24	187	317	.6557A	.1342	.99	-.1	1.06	.6	.49	.49	73.3	72.0	-.1413	651398
25	221	317	.0454A	.1409	.86	-2.3	.75	-2.0	.56	.49	78.3	74.4	-.1916	673372
26	215	317	-.1011A	.1435	1.17	2.5	1.43	2.7	.39	.49	69.3	75.3	.0867	676208
27	243	317	-.5693A	.1555	.80	-2.7	.59	-2.5	.62	.49	81.3	80.0	-.0699	676223
28	182	317	.7016A	.1340	.91	-1.6	.80	-2.1	.54	.49	75.3	71.9	-.0954	676229
29	229	317	-.4578A	.1521	1.11	1.4	1.03	.2	.46	.49	75.0	78.7	.1515	676241
30	194	317	.6601A	.1342	.84	-3.0	.75	-2.7	.59	.49	75.7	72.0	-.2777	676247
31	90	162	.6663	.1839	1.07	.9	1.05	.5	.41	.46	66.9	70.5	.0006	690967
32	97	162	.4266	.1865	.80	-2.8	.70	-2.5	.61	.47	79.2	71.2	.0006	690968
33	107	162	.0675	.1932	.81	-2.4	.70	-2.0	.61	.47	83.1	73.4	.0005	690969
34	61	162	1.6457	.1872	1.18	2.1	1.26	2.1	.31	.42	68.2	72.4	.0009	690970
35	56	162	1.8234	.1900	1.07	.8	1.11	.9	.37	.41	68.8	73.5	.0009	690971
36	133	162	-1.1235	.2478	.98	-.1	.85	-.3	.50	.48	85.7	86.4	.0004	690972
37	82	162	.9347	.1827	1.33	4.0	1.33	2.8	.22	.46	58.4	70.7	.0007	690973
38	94	155	.4598	.1980	.94	-.6	.96	-.2	.56	.52	74.7	74.0	.0019	690974
39	47	155	2.3089	.2103	1.33	3.0	1.55	2.1	.26	.45	67.8	77.2	.0027	690975
40	91	155	.5766	.1968	.85	-1.7	.74	-1.6	.60	.52	76.0	73.6	.0020	690976
41	58	155	1.8461	.2008	1.34	3.3	1.48	2.0	.31	.48	66.4	75.1	.0025	690977
42	82	155	.9206	.1948	.85	-1.7	.79	-1.3	.60	.52	79.5	73.1	.0021	690978
43	101	155	.1799	.2024	.85	-1.8	.69	-1.7	.62	.52	78.1	74.8	.0018	690979
44	75	155	1.1859	.1948	1.02	.2	.99	.0	.50	.51	71.9	73.2	.0022	690980
45	129	155	-1.2248	.2618	.79	-1.3	.49	-1.5	.62	.49	87.7	87.0	.0016	690981
46	60	162	1.6808	.1877	.99	-.1	.99	.0	.41	.42	72.7	72.6	.0009	690982
MEAN	166.1	261.9	.2972	.1654	1.01	.1	.98	-.1			74.7	75.7		
S.D.	66.2	75.5	.8782	.0317	.17	2.3	.30	1.9			7.3	4.8		

Grade 7 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL CORR.	EXP.	EXACT MATCH OBS%	EXP%	DISPLACE	ITEM
1	216	332	-.0860A	.1417	1.00	.0	.94	-.4	.55	.55	74.8	75.2	.0146	651845
2	163	332	1.0296A	.1324	1.03	.5	1.11	1.3	.48	.50	70.8	71.6	-.1281	651850
3	238	332	-.5127A	.1514	.91	-1.2	.77	-1.4	.61	.56	79.7	79.0	-.0312	651851
4	249	332	-.9423A	.1658	.94	-.6	.70	-1.5	.65	.57	83.1	83.4	.1346	651852
5	265	332	-1.1108A	.1729	.73	-2.8	.46	-2.8	.70	.58	87.4	85.1	-.1703	652047
6	206	332	-.1676A	.1432	1.29	4.0	1.56	3.6	.43	.55	66.8	75.9	.2965	652095
7	176	332	.7218A	.1329	.85	-2.7	.82	-2.1	.59	.51	78.4	71.7	-.0499	652096
8	173	332	.5934A	.1335	.88	-2.3	.84	-1.8	.59	.52	77.7	71.9	.1327	652113
9	270	332	-1.5171A	.1939	.88	-.9	.51	-2.0	.69	.59	87.4	88.7	.0747	652115
10	186	332	.3633A	.1354	.94	-1.0	.89	-1.1	.56	.53	74.1	72.4	.1319	652116
11	202	332	.7690A	.1327	1.22	3.7	1.26	2.8	.40	.51	61.8	71.7	-.5773	652117
12	248	332	-.7156A	.1576	.80	-2.6	.78	-1.2	.66	.57	85.0	81.1	-.0732	652118
13	213	332	.1081A	.1385	.79	-3.7	.66	-3.3	.65	.54	79.1	73.7	-.1233	652119
14	196	332	.0889A	.1388	1.19	3.0	1.22	1.8	.45	.54	67.4	73.8	.2259	652121
15	171	332	.2787A	.1363	1.45	6.7	1.60	4.8	.32	.53	56.5	72.7	.4850	652124
16	202	332	.1325A	.1381	1.21	3.3	1.29	2.3	.42	.54	67.1	73.5	.0683	652126
17	214	332	-.3521A	.1473	1.16	2.2	1.10	.7	.52	.56	73.8	77.5	.3265	652131
18	221	332	-.0982A	.1419	.93	-1.1	.79	-1.7	.58	.55	75.1	75.3	-.0770	652140
19	272	332	-1.4788A	.1916	.93	-.5	.85	-.4	.62	.59	89.0	88.4	-.0413	652141
20	238	332	-.7439A	.1586	1.09	1.1	1.12	.7	.57	.57	77.7	81.4	.2067	652145
21	194	332	.6925A	.1330	.91	-1.6	.82	-2.1	.57	.51	73.8	71.7	-.3484	676286
22	179	332	.7271A	.1329	.88	-2.2	.84	-2.0	.58	.51	76.7	71.7	-.1088	676298
23	259	332	-.9993A	.1681	.86	-1.5	.72	-1.3	.64	.58	84.7	84.0	-.0921	676304
24	274	332	-1.2847A	.1811	.79	-2.0	.82	-.7	.63	.59	90.4	86.7	-.3265	676307
25	203	332	-.1457A	.1428	.99	-.1	.85	-1.1	.60	.55	75.7	75.7	.3318	676308
26	250	332	-.1457A	.1428	.70	-5.1	.54	-4.1	.67	.55	84.7	75.7	-.7286	676309
27	194	332	.2010A	.1372	.97	-.5	.93	-.6	.56	.54	73.8	73.1	.1495	676311
28	199	332	.4390A	.1347	1.34	5.3	1.63	5.5	.34	.53	59.5	72.1	-.1864	676312
29	194	332	.1520A	.1379	1.03	.5	.93	-.6	.54	.54	72.4	73.4	.1992	676316
30	247	332	-.7513A	.1588	.85	-1.9	.61	-2.3	.66	.57	83.1	81.5	-.0097	676317
31	78	171	.9853	.1890	.75	-3.3	.72	-2.6	.63	.53	84.7	72.3	-.0003	690983
32	97	171	.2960	.1937	.89	-1.3	.80	-1.5	.62	.57	78.7	72.9	-.0005	690984
33	56	171	1.7907	.1960	1.40	4.0	1.76	4.1	.28	.46	61.3	74.2	-.0001	690985
34	112	171	-.2995	.2066	.77	-2.5	.68	-1.7	.71	.60	83.3	77.0	-.0006	690986
35	76	161	1.1265	.1855	1.05	.7	1.04	.4	.42	.46	72.2	70.9	.0032	690987
36	102	161	.2138	.1927	.95	-.6	.86	-.8	.52	.49	73.5	72.8	.0028	690988
37	72	161	1.2646	.1861	1.24	2.9	1.26	2.1	.29	.45	60.3	71.1	.0032	690989
38	69	161	1.3689	.1869	1.22	2.7	1.43	3.4	.28	.45	64.9	71.2	.0033	690990
39	131	161	-1.0981	.2467	.91	-.6	1.03	.2	.55	.50	87.4	85.7	.0025	690991
40	122	161	-.6154	.2193	.93	-.6	.76	-.9	.55	.50	80.8	80.2	.0026	690992
41	82	161	.9204	.1854	1.10	1.3	1.12	1.0	.41	.47	65.6	70.9	.0031	690993
42	48	161	2.1455	.2004	1.57	5.1	2.09	5.2	.05	.40	60.9	75.8	.0035	690994
43	95	171	.3706	.1927	.77	-2.9	.68	-2.6	.68	.57	80.0	72.7	-.0005	690995
44	129	171	-1.1379	.2432	.83	-1.2	.57	-1.5	.72	.63	84.0	84.5	-.0008	690996
45	135	171	-1.5301	.2700	1.02	.2	1.18	.6	.62	.64	89.3	88.1	-.0008	690997
46	66	171	1.4172	.1911	1.51	5.2	1.76	4.9	.24	.49	54.0	72.7	-.0002	690998
MEAN	173.5	274.3	.0536	.1682	1.01	.1	.99	.0			75.4	76.6		
S.D.	67.1	79.1	.8996	.0340	.21	2.7	.36	2.4			9.5	5.5		

Grade 8 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL CORR.	EX-EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	213	345	.2781A	.1335	1.05	.8	1.30	2.6	.50	.54	74.9	73.3	-.1712	652149
2	253	345	-.1619A	.1404	.86	-2.2	1.03	.3	.58	.55	81.9	75.9	-.5744	652152
3	203	345	-.0192A	.1378	1.14	2.2	1.28	2.1	.50	.55	74.0	75.0	.3124	652153
4	280	345	-1.4680A	.1876	.99	.0	.76	-.9	.61	.60	88.3	88.6	-.0243	652157
5	188	345	.2163A	.1343	1.00	.0	.97	-.2	.56	.54	74.0	73.6	.3373	652158
6	220	345	.1116A	.1357	1.26	3.9	1.36	2.8	.38	.54	65.7	74.2	-.1356	652160
7	251	345	-.5082A	.1485	.83	-2.4	.64	-2.6	.64	.57	82.9	78.9	-.1659	652162
8	233	345	-.3843A	.1453	.86	-2.0	.65	-2.7	.67	.56	77.5	77.8	.1094	652163
9	230	345	-.0833A	.1389	.77	-3.8	.63	-3.4	.67	.55	82.9	75.4	-.1361	652164
10	140	345	1.3575A	.1301	1.15	2.7	1.22	2.0	.37	.47	65.1	71.5	.0015	652166
11	245	345	-.1504A	.1401	.72	-4.7	.57	-3.9	.68	.55	83.8	75.8	-.3934	652167
12	203	345	.0987A	.1359	1.32	4.7	1.31	2.5	.38	.54	62.9	74.3	.1934	652170
13	228	345	-.5336A	.1492	.93	-.9	.75	-1.7	.68	.57	78.1	79.1	.3624	652182
14	155	345	1.3931A	.1303	1.04	.8	1.02	.2	.49	.47	71.1	71.6	-.2802	652186
15	273	345	-1.2620A	.1768	.80	-1.9	.50	-2.5	.71	.59	87.3	86.8	.0034	652188
16	229	345	-.2607A	.1424	1.12	1.7	1.20	1.4	.50	.56	72.4	76.7	.0655	652193
17	207	345	-.0548A	.1384	.94	-1.0	.78	-1.9	.63	.55	76.5	75.2	.2764	652198
18	183	345	.9074A	.1294	.92	-1.5	.83	-1.8	.56	.50	73.0	71.5	-.2689	652199
19	206	345	.1583A	.1350	1.35	5.3	1.48	3.8	.35	.54	63.8	73.9	.0791	673378
20	279	345	-.9924A	.1648	.64	-4.3	.44	-3.4	.69	.58	90.2	84.0	-.4815	673380
21	259	345	-1.1261A	.1704	1.04	.4	.80	-.9	.65	.59	83.2	85.4	.2661	673381
22	193	345	.1863A	.1347	1.06	1.0	1.07	.7	.53	.54	70.5	73.8	.2812	676318
23	235	345	-.3822A	.1452	.96	-.5	.85	-1.0	.60	.56	77.5	77.8	.0655	676320
24	147	345	1.2350A	.1296	.99	-.2	.97	-.2	.48	.48	71.4	71.4	.0060	676323
25	196	345	.2616A	.1337	.99	-.1	.95	-.4	.55	.54	74.0	73.4	.1529	676324
26	126	345	1.0911A	.1293	1.09	1.7	1.14	1.5	.41	.49	67.6	71.4	.5039	676325
27	198	345	.6818A	.1301	1.18	3.1	1.53	4.8	.41	.52	65.7	71.9	-.3042	676330
28	195	345	.8158A	.1296	.84	-3.1	.77	-2.6	.61	.51	78.1	71.7	-.3845	676332
29	256	345	-.5898A	.1508	.83	-2.4	.62	-2.6	.64	.57	83.5	79.7	-.2062	676333
30	232	345	-.5287A	.1491	1.03	.5	.89	-.6	.60	.57	78.1	79.1	.2768	676334
31	112	174	-.2212	.2006	.79	-2.3	.65	-2.0	.69	.58	82.2	76.5	.0008	690999
32	102	174	.1613	.1915	.80	-2.5	.66	-2.4	.67	.56	79.6	73.9	.0009	691000
33	91	174	.5516	.1860	1.02	.3	1.10	.7	.53	.54	72.0	72.3	.0011	691001
34	133	174	-1.2319	.2467	1.08	.6	1.44	1.3	.56	.62	87.3	86.2	.0006	691002
35	49	174	2.0116	.1950	1.25	2.6	1.46	2.0	.27	.42	70.1	74.9	.0016	691003
36	75	174	1.0954	.1839	1.14	1.8	1.15	1.1	.44	.50	66.2	71.7	.0013	691004
37	132	171	-.8340	.2249	.95	-.4	1.04	.2	.56	.53	83.5	82.4	-.0004	691005
38	130	171	-.7351	.2199	.93	-.6	1.20	.8	.56	.53	83.5	81.3	-.0004	691006
39	98	171	.5168	.1848	1.21	2.5	1.18	1.2	.37	.50	62.0	72.4	-.0003	691007
40	124	171	-.4610	.2081	.87	-1.2	.76	-1.1	.61	.53	80.4	78.5	-.0004	691008
41	73	171	1.3497	.1828	1.33	3.9	1.43	2.8	.27	.46	60.1	71.2	-.0001	691009
42	80	171	1.1172	.1819	1.14	1.8	1.22	1.6	.37	.48	67.1	71.1	-.0001	691010
43	96	171	.5848	.1840	.91	-1.2	.84	-1.2	.56	.50	75.3	72.1	-.0002	691011
44	114	174	-.3026	.2030	1.11	1.1	.93	-.3	.54	.59	71.3	77.2	.0008	691012
45	50	174	1.9738	.1941	1.30	3.1	1.60	2.5	.23	.42	69.4	74.7	.0016	691013
46	112	171	.0192	.1934	.88	-1.4	.87	-.7	.60	.52	80.4	74.6	-.0004	691014
MEAN	174.5	285.0	.1279	.1621	1.01	.1	1.00	.0			75.3	76.1		
S.D.	65.9	82.2	.8318	.0310	.17	2.3	.30	2.1			7.6	4.5		

Grade 11 Mathematics

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	258	303	-1.5986A	.1881	.63	-3.5	.44	-2.7	.65	.54	92.0	87.2	-.4771	651135
2	150	303	.3105A	.1363	1.30	4.9	1.82	6.3	.29	.49	59.1	71.5	.2767	651164
3	168	303	.1526A	.1377	.94	-1.0	.97	-.3	.53	.49	73.4	72.2	.1039	651166
4	239	303	-1.5773A	.1870	1.12	1.0	1.14	.6	.54	.54	85.3	87.0	.2285	651168
5	178	303	.0376A	.1390	.91	-1.6	.83	-1.6	.57	.50	76.2	72.8	.0295	651169
6	168	303	.0376A	.1390	1.02	.4	.99	-.1	.51	.50	72.7	72.8	.2191	651171
7	227	303	-1.1449A	.1677	.94	-.6	.90	-.4	.62	.53	82.5	82.8	.1383	651173
8	187	303	-.2872A	.1439	1.04	.6	.97	-.2	.51	.51	73.8	75.1	.1795	651177
9	145	303	.5984A	.1350	1.04	.7	.97	-.3	.44	.47	65.7	70.6	.0801	651180
10	191	303	-.2995A	.1441	.99	-.2	1.10	.8	.54	.51	75.2	75.2	.1114	651182
11	207	303	-.5340A	.1491	.96	-.6	.85	-1.0	.55	.52	77.6	77.0	.0073	651183
12	179	303	.6205A	.1349	1.01	.2	1.02	.3	.50	.47	72.4	70.5	-.5685	651198
13	185	303	-.4583A	.1474	1.16	2.2	1.07	.5	.50	.52	68.2	76.4	.3913	651201
14	223	303	-.9439A	.1606	.88	-1.4	1.02	.2	.62	.53	80.4	80.8	.0395	651223
15	217	303	-.7783A	.1554	1.07	.9	1.12	.8	.49	.53	78.3	79.2	.0216	651226
16	226	303	-.6946A	.1531	.91	-1.2	.82	-1.1	.54	.52	80.1	78.5	-.2933	651227
17	166	303	.4324A	.1356	1.06	1.1	1.04	.4	.43	.48	67.8	71.1	-.1379	651238
18	209	303	-.3777A	.1457	.83	-2.6	.80	-1.5	.60	.51	79.4	75.8	-.1962	651311
19	216	303	-.1986A	.1424	.85	-2.4	.86	-1.1	.55	.51	81.5	74.4	-.5423	651319
20	184	303	.3291A	.1362	.86	-2.6	.81	-1.9	.58	.49	76.9	71.4	-.3783	651320
21	126	303	.8505A	.1350	1.06	1.1	1.07	.6	.38	.46	64.3	70.4	.1734	673384
22	165	303	.4385A	.1356	.95	-.9	.94	-.5	.50	.48	73.1	71.1	-.1255	673385
23	178	303	.3292A	.1362	.94	-1.0	.88	-1.1	.51	.49	74.8	71.4	-.2617	673387
24	178	303	.1521A	.1377	.90	-1.8	.81	-1.8	.56	.49	74.8	72.2	-.0851	673388
25	231	303	-1.4585A	.1811	1.12	1.0	.92	-.2	.61	.54	82.5	85.8	.3453	676337
26	212	303	-.8273A	.1569	.90	-1.2	.73	-1.7	.64	.53	80.1	79.7	.1899	676343
27	123	303	.7712A	.1349	1.17	3.0	1.20	1.8	.34	.46	61.2	70.4	.3073	676347
28	226	303	-1.0405A	.1639	.89	-1.3	.66	-1.9	.64	.53	82.5	81.8	.0591	676350
29	251	303	-1.8174A	.2003	.92	-.5	.78	-.7	.61	.54	89.5	89.0	.0510	676351
30	251	303	-1.8751A	.2038	.93	-.5	.65	-1.3	.63	.55	89.5	89.5	.1094	676352
31	79	150	.4255	.1909	1.23	2.8	1.17	1.1	.31	.47	59.7	70.9	.0040	691015
32	77	150	.4982	.1905	.84	-2.1	.77	-1.7	.57	.47	78.5	70.7	.0040	691016
33	55	150	1.3038	.1950	1.49	5.2	1.71	3.3	.08	.42	56.9	72.1	.0044	691017
34	54	150	1.3419	.1956	1.22	2.5	1.35	1.8	.24	.42	68.1	72.3	.0044	691018
35	61	150	1.0793	.1921	1.57	6.2	1.77	3.8	.08	.44	52.1	71.0	.0043	691019
36	34	150	2.1890	.2200	1.36	2.9	1.97	3.0	.09	.36	75.0	80.0	.0046	691020
37	89	153	.0766	.1971	1.04	.5	1.01	.1	.50	.52	70.4	72.9	-.0007	691021
38	60	153	1.1535	.1931	1.09	1.1	1.08	.5	.39	.44	67.6	70.8	-.0006	691022
39	64	153	1.0053	.1919	1.12	1.5	1.15	.9	.37	.45	66.9	70.5	-.0006	691023
40	120	153	-1.3974	.2542	.99	.0	.83	-.4	.60	.58	83.8	85.4	-.0008	691024
41	82	153	.3431	.1935	1.07	.9	1.22	1.5	.46	.50	68.3	71.7	-.0006	691025
42	124	153	-1.6754	.2739	.82	-1.0	.55	-1.3	.68	.58	88.7	87.9	-.0008	691026
43	96	153	-.2028	.2029	1.05	.6	1.08	.5	.50	.53	70.4	74.7	-.0007	691027
44	75	153	.6022	.1916	.84	-2.2	.78	-1.5	.58	.48	78.2	70.7	-.0006	691028
45	80	150	.3891	.1912	.99	-.1	.92	-.5	.47	.47	74.3	71.0	.0040	691029
46	62	150	1.0425	.1917	1.08	1.0	1.05	.3	.37	.44	68.1	70.9	.0043	691030
MEAN	153.8	250.3	-.0582	.1702	1.02	.3	1.01	.0			74.3	75.8		
S.D.	65.2	72.2	.9475	.0329	.17	2.1	.30	1.7			8.8	6.0		

Appendix M: Science Item Bank Difficulties

Grade 5 Science

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	173	326	-.1854A	.1408	.97	-.5	1.05	.5	.57	.57	73.2	74.1	-.0923	651053
2	202	326	-1.0269A	.1482	1.06	.8	1.11	.8	.58	.59	74.2	76.7	.1566	651056
3	170	326	-.5697A	.1429	1.43	5.8	1.74	5.2	.39	.58	62.7	75.0	.3515	651058
4	152	326	-.2053A	.1408	1.45	6.1	1.57	4.5	.34	.57	58.2	74.1	.3398	651078
5	217	326	-.6959A	.1441	.87	-1.9	.76	-2.1	.64	.59	76.3	75.4	-.5191	651091
6	217	326	-1.0039A	.1479	1.07	1.0	1.21	1.4	.54	.59	76.3	76.6	-.2046	651092
7	213	326	-.6346A	.1435	.85	-2.4	.79	-1.9	.66	.58	81.5	75.2	-.4875	651107
8	213	326	-.8963A	.1464	.74	-4.1	.58	-3.7	.71	.59	82.9	76.2	-.2215	651113
9	243	326	-2.2890A	.1838	1.27	2.4	1.19	.8	.60	.61	81.2	85.9	.4436	651114
10	217	326	-1.3424A	.1539	.99	-.1	.86	-.8	.63	.60	75.3	78.3	.1422	651115
11	166	326	.0567A	.1404	1.08	1.3	1.10	1.0	.52	.55	73.2	73.8	-.1932	651119
12	237	326	-1.8842A	.1682	.90	-1.2	.61	-2.0	.70	.60	82.2	82.3	.1980	673791
13	157	326	.0703A	.1404	1.04	.6	.97	-.2	.54	.55	70.0	73.8	-.0317	676452
14	199	326	-.9388A	.1470	.93	-1.0	.87	-.9	.64	.59	78.7	76.4	.1316	676453
15	187	326	-.7624A	.1448	.88	-1.7	.77	-2.0	.65	.59	77.0	75.7	.2038	676454
16	219	326	-1.6721A	.1618	1.39	4.2	1.71	3.0	.49	.60	73.2	80.4	.4305	676456
17	218	326	-1.5129A	.1577	.86	-1.8	.75	-1.5	.72	.60	81.5	79.2	.2927	676457
18	162	326	-.0930A	.1405	1.06	.9	1.03	.3	.53	.56	72.1	73.9	.0323	676459
19	204	326	-.8716A	.1461	1.15	2.1	1.36	2.5	.51	.59	70.7	76.1	-.0448	676460
20	218	326	-1.7000A	.1626	1.41	4.4	1.84	3.4	.49	.60	71.4	80.7	.4817	676461
21	236	326	-1.1838A	.1508	.87	-1.8	.80	-1.3	.62	.60	80.1	77.5	-.5019	676462
22	226	326	-1.4614A	.1565	.78	-3.1	.62	-2.4	.72	.60	82.6	78.9	.0481	676463
23	205	326	-.2880A	.1412	.88	-1.9	.83	-1.6	.65	.57	78.7	74.3	-.6530	676465
24	227	326	-1.6387A	.1609	.85	-1.9	.66	-1.9	.71	.60	84.0	80.2	.2050	676466
25	260	326	-2.0279A	.1732	.78	-2.4	.91	-.3	.65	.61	87.5	83.6	-.3763	676467
26	102	168	-1.0292	.1993	1.00	.0	.99	.0	.58	.58	73.8	74.9	-.0003	691146
27	112	168	-1.4451	.2095	.96	-.4	.82	-.8	.61	.59	77.2	77.3	-.0005	691147
28	106	168	-1.1906	.2027	.93	-.7	.88	-.6	.62	.58	79.9	75.7	-.0004	691148
29	91	168	-.6072	.1932	1.38	3.9	1.35	2.3	.36	.56	55.0	73.2	-.0001	691149
30	78	168	-.1301	.1908	1.06	.7	1.04	.3	.50	.53	69.8	72.6	.0001	691150
31	118	158	-1.5991	.2397	.79	-1.8	.69	-1.0	.71	.61	87.0	81.4	.0006	691151
32	87	158	-.1088	.2078	1.59	5.1	2.10	4.8	.32	.59	56.5	75.4	.0014	691152
33	121	158	-1.7766	.2471	.78	-1.8	.50	-1.7	.72	.61	85.5	82.7	.0005	691153
34	115	158	-1.4313	.2336	.60	-3.9	.41	-2.6	.80	.61	90.6	80.4	.0006	691154
35	111	158	-1.2196	.2269	1.02	.3	.91	-.3	.60	.61	78.3	79.5	.0007	691155
36	118	158	-1.5991	.2397	1.15	1.2	1.11	.5	.54	.61	76.8	81.4	.0006	691156
37	108	158	-1.0680	.2229	.94	-.5	.90	-.4	.64	.61	81.9	78.9	.0008	691157
38	97	168	-.8341	.1960	1.05	.6	1.20	1.3	.54	.57	72.5	73.9	-.0003	691158
39	117	168	-1.6723	.2172	.83	-1.7	.64	-1.6	.69	.59	81.9	79.1	-.0005	691159
40	132	168	-2.5078	.2615	.91	-.5	1.61	1.5	.66	.61	87.2	87.0	-.0004	691160
41	129	158	-2.3200	.2769	1.29	1.7	2.02	1.9	.45	.60	84.1	87.1	.0005	691212
MEAN	167.8	262.4	-1.1048	.1793	1.02	.1	1.05	.1			76.7	77.9		
S.D.	52.7	79.6	.6701	.0391	.22	2.5	.41	2.1			8.0	3.8		

Grade 8 Science

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	221	333	-1.0569A	.1432	.91	-1.3	.93	-.4	.60	.57	79.8	75.5	-.1597	651233
2	189	333	-.7829A	.1393	.90	-1.7	.89	-.9	.61	.56	75.8	74.0	.2081	651235
3	223	333	-1.4027A	.1503	.87	-1.8	.73	-1.8	.68	.58	79.5	78.0	.1501	651236
4	242	333	-1.0789A	.1436	.84	-2.5	.78	-1.7	.62	.57	80.8	75.7	-.6409	651239
5	178	333	-.4853A	.1365	1.08	1.4	1.13	1.2	.50	.54	72.7	72.9	.1137	651246
6	215	333	-1.1231A	.1444	1.22	3.1	1.26	1.8	.46	.57	69.0	75.9	.0370	651256
7	179	333	-.5047A	.1366	1.01	.1	.97	-.2	.54	.54	73.1	72.9	.1147	651258
8	219	333	-1.2597A	.1471	.78	-3.4	.59	-3.2	.71	.58	82.2	76.9	.0913	651261
9	209	333	-.9706A	.1418	1.33	4.7	1.49	3.3	.39	.56	65.7	75.0	.0061	651263
10	180	333	-.5436A	.1369	1.47	6.9	1.86	6.3	.31	.55	60.6	73.0	.1354	651264
11	199	333	-.7251A	.1386	.92	-1.2	.82	-1.6	.59	.55	76.1	73.7	-.0430	651284
12	255	333	-1.4930A	.1526	1.03	.4	1.48	2.5	.48	.58	78.8	78.7	-.5780	651291
13	182	333	.2280A	.1353	1.09	1.5	1.07	.7	.53	.50	67.3	72.4	-.6672	651292
14	235	333	-1.4181A	.1507	.99	-.1	.77	-1.5	.58	.58	74.7	78.2	-.1110	651300
15	245	333	-2.4037A	.1876	1.14	1.2	.78	-.8	.75	.61	81.5	87.6	.6379	673795
16	194	333	-.7282A	.1387	.88	-2.0	.84	-1.4	.62	.55	77.8	73.7	.0573	673796
17	220	333	-1.1161A	.1443	.75	-4.1	.62	-3.1	.70	.57	83.5	75.9	-.0772	673797
18	221	333	-1.3224A	.1484	.86	-2.1	.70	-2.1	.67	.58	81.1	77.4	.1120	673798
19	207	333	-1.0910A	.1438	.87	-2.1	.73	-2.1	.66	.57	79.8	75.7	.1692	673799
20	227	333	-1.0660A	.1434	.80	-3.2	.65	-2.9	.66	.57	81.8	75.6	-.2851	673800
21	210	333	-1.0208A	.1426	.91	-1.4	.85	-1.2	.62	.57	78.1	75.3	.0367	676474
22	189	333	-.8909A	.1407	1.10	1.6	1.06	.5	.53	.56	70.4	74.5	.3171	676475
23	262	333	-2.5405A	.1951	1.12	.9	1.88	2.4	.62	.61	86.9	88.7	.2833	676476
24	213	333	-1.3540A	.1492	1.32	4.1	1.64	3.4	.45	.58	68.4	77.7	.3134	676477
25	204	333	-.7543A	.1390	1.11	1.8	1.00	.1	.49	.56	66.7	73.8	-.1126	676478
26	61	168	.4531	.1945	1.90	8.4	2.28	5.3	.05	.48	42.9	73.2	.0024	691161
27	99	168	-.9540	.1979	.81	-2.3	.76	-1.4	.68	.58	81.6	73.9	.0023	691162
28	104	168	-1.1539	.2023	1.19	2.0	1.13	.7	.49	.59	67.3	75.1	.0023	691163
29	69	168	.1555	.1915	1.05	.7	1.04	.3	.47	.51	70.1	72.2	.0024	691164
30	98	168	-.9150	.1972	.83	-2.0	.71	-1.8	.66	.57	78.2	73.7	.0023	691165
31	91	168	-.6486	.1933	1.09	1.1	1.03	.3	.52	.56	67.3	72.3	.0023	691166
32	128	168	-2.3478	.2559	.90	-.6	.75	-.6	.67	.63	87.1	86.4	.0022	691167
33	96	165	-.4303	.1936	.99	-.1	1.00	.0	.54	.53	73.3	73.6	-.0002	691168
34	138	165	-2.4556	.2751	.86	-.8	.79	-.4	.64	.57	90.0	88.6	-.0001	691169
35	132	165	-2.0501	.2468	.79	-1.5	.51	-1.7	.69	.56	86.7	85.1	-.0002	691170
36	137	165	-2.3815	.2693	.83	-1.0	.52	-1.3	.67	.57	89.3	88.0	-.0001	691171
37	102	165	-.6586	.1968	1.04	.5	.90	-.6	.50	.53	71.3	74.5	-.0002	691172
38	131	165	-1.9900	.2433	.80	-1.5	.54	-1.6	.68	.56	87.3	84.5	-.0002	691173
39	114	165	-1.1465	.2077	1.15	1.5	1.12	.6	.46	.55	72.7	77.1	-.0002	691174
40	116	168	-1.6828	.2196	1.26	2.2	1.58	2.1	.46	.61	78.9	79.4	.0022	691175
41	134	165	-2.1758	.2548	1.16	1.0	1.41	1.1	.46	.56	84.7	86.2	-.0002	691176
MEAN	172.4	268.0	-1.1533	.1758	1.02	.2	1.01	.0			76.1	77.4		
S.D.	55.4	81.2	.7096	.0422	.22	2.6	.40	2.1			8.9	5.0		

Grade 11 Science

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PTBISERL-EX CORR.	PTBISERL-EX EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	DISPLACE	ITEM
1	180	296	-.9474A	.1558	.97	-.4	.85	-1.0	.63	.59	78.7	77.8	.2988	651769
2	228	296	-1.9038A	.1817	.76	-2.5	.68	-1.4	.72	.62	88.4	84.1	-.0315	651770
3	172	296	-.9231A	.1553	1.27	3.2	1.40	2.5	.51	.59	71.9	77.7	.4532	651772
4	205	296	-1.4991A	.1686	.86	-1.6	.59	-2.4	.72	.61	81.6	81.4	.2449	651773
5	227	296	-1.9381A	.1830	.75	-2.6	.55	-2.2	.75	.62	89.1	84.4	.0381	651776
6	202	296	-.9231A	.1553	1.19	2.3	1.34	2.2	.48	.59	71.9	77.7	-.2588	651778
7	185	296	-.7635A	.1526	1.08	1.1	1.05	.4	.54	.58	74.5	76.8	-.0008	651784
8	200	296	-1.1989A	.1610	1.18	2.0	1.16	1.0	.52	.60	74.2	79.5	.0713	651785
9	213	296	-1.3589A	.1648	.95	-.5	.86	-.8	.62	.61	80.9	80.5	-.1192	651787
10	186	296	-.9474A	.1558	1.37	4.2	1.46	2.8	.43	.59	68.9	77.8	.1603	651788
11	227	296	-1.8700A	.1805	.76	-2.5	.53	-2.4	.73	.62	88.4	83.9	-.0321	651792
12	174	296	-.5491A	.1495	.88	-1.6	.81	-1.6	.61	.57	79.8	75.6	.0347	651793
13	191	296	-1.1730A	.1604	.99	.0	.85	-.9	.63	.60	78.3	79.3	.2687	651798
14	133	296	.3723A	.1441	1.31	4.6	1.60	4.3	.36	.50	63.7	72.6	-.0167	651808
15	217	296	-1.5417A	.1698	.78	-2.5	.70	-1.6	.71	.61	87.3	81.7	-.0502	651817
16	172	296	-.4655A	.1485	1.01	.1	1.06	.5	.56	.57	76.0	75.2	-.0044	651822
17	186	296	-.8109A	.1534	.83	-2.4	.71	-2.3	.67	.59	82.4	77.0	.0233	651824
18	221	296	-1.5667A	.1706	.80	-2.3	.57	-2.5	.70	.61	85.0	81.9	-.1479	673804
19	172	296	-.7074A	.1517	1.07	.9	1.00	.0	.56	.58	72.3	76.5	.2368	673806
20	163	296	-.2143A	.1461	1.42	5.5	1.52	4.0	.36	.55	58.8	74.1	-.0588	673808
21	160	296	.0747A	.1444	1.50	6.8	1.88	6.3	.29	.53	58.8	73.3	-.2776	673809
22	189	296	-1.1384A	.1596	.90	-1.2	.80	-1.3	.68	.60	80.9	79.1	.2817	676484
23	256	296	-2.7299A	.2219	.55	-3.7	.33	-2.4	.73	.63	93.3	90.1	-.4785	676486
24	238	296	-2.3132A	.1990	.89	-.9	.57	-1.6	.68	.62	88.4	87.0	.0183	676487
25	228	296	-1.5343A	.1696	.74	-3.1	.58	-2.4	.69	.61	85.4	81.7	-.4145	676489
26	228	296	-1.4169A	.1664	.83	-2.0	.67	-1.9	.64	.61	82.4	80.9	-.5361	676490
27	233	296	-1.7987A	.1780	.61	-4.6	.36	-3.8	.77	.62	90.3	83.5	-.3216	676494
28	220	296	-1.6616A	.1734	.90	-1.1	1.09	.5	.66	.61	83.9	82.5	-.0190	676495
29	204	296	-1.3473A	.1645	1.12	1.4	.91	-.5	.57	.61	73.8	80.4	.1174	676496
30	216	296	-1.4688A	.1678	.86	-1.6	.73	-1.5	.67	.61	85.0	81.2	-.0949	676498
31	99	148	-1.1136	.2263	1.22	1.7	1.29	1.3	.51	.61	74.4	79.3	-.0023	691177
32	118	148	-2.1806	.2791	.94	-.3	.57	-1.2	.67	.63	86.6	87.1	.0012	691178
33	96	148	-.8985	.2169	1.17	1.6	1.10	.6	.49	.58	67.9	76.9	.0013	691179
34	110	148	-1.6361	.2458	.80	-1.5	.72	-1.0	.71	.61	88.1	82.9	.0012	691180
35	80	148	-.2006	.2030	1.21	2.2	1.17	1.1	.43	.53	66.4	73.0	.0013	691181
36	122	148	-2.5216	.3065	.88	-.5	.53	-1.0	.70	.64	90.3	89.8	.0012	691182
37	82	148	-.2834	.2041	.93	-.7	.86	-.8	.54	.54	74.6	73.4	.0013	691183
38	103	148	-1.2445	.2285	.82	-1.6	.76	-1.0	.69	.60	86.6	79.6	.0012	691184
39	114	148	-1.9742	.2566	1.01	.1	.72	-.8	.61	.61	82.0	83.6	-.0027	691185
40	99	148	-1.1136	.2263	.98	-.1	.99	.0	.62	.61	78.9	79.3	-.0023	691186
41	116	148	-2.1093	.2632	.84	-1.1	.48	-1.6	.71	.61	85.7	84.3	-.0028	691187
42	118	148	-2.2519	.2708	1.16	1.1	1.24	.7	.53	.61	82.7	85.3	-.0028	691188
43	76	148	-.0437	.2087	1.17	1.7	1.28	1.8	.48	.56	72.2	74.8	-.0018	691189
44	93	148	-.8160	.2194	.85	-1.3	.82	-1.0	.66	.60	83.5	77.8	-.0022	691190
45	122	148	-2.5661	.2905	.85	-.9	.43	-1.4	.69	.60	88.0	87.7	-.0029	691191
46	90	148	-.6256	.2101	1.49	4.3	1.83	3.7	.32	.56	60.4	75.1	.0013	691192
MEAN	166.6	244.5	-1.2575	.1915	.99	.0	.91	-.2			79.2	80.1		
S.D.	52.7	70.5	.7233	.0429	.22	2.5	.37	2.1			8.8	4.4		

Appendix N: Reading Pre- and Post-Equating Summary

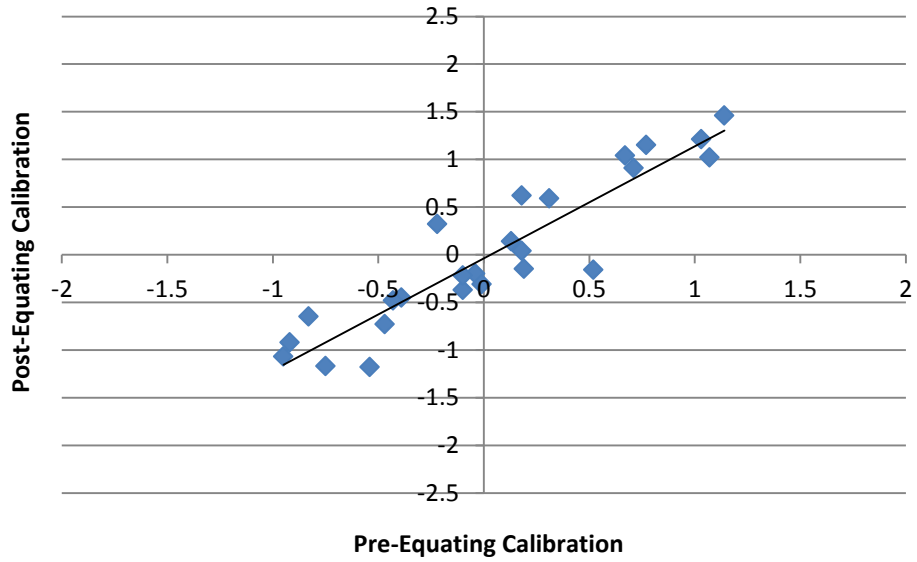
The Pre- values were taken from the calibrated item and used to create the Raw-to-Scale Conversion Tables. The Post- values were taken directly from unanchored calibration runs.

The statistics of Mean, Shift, Corr, SD, and Ratio are computed from the items that have both Pre and Post *logit* values.

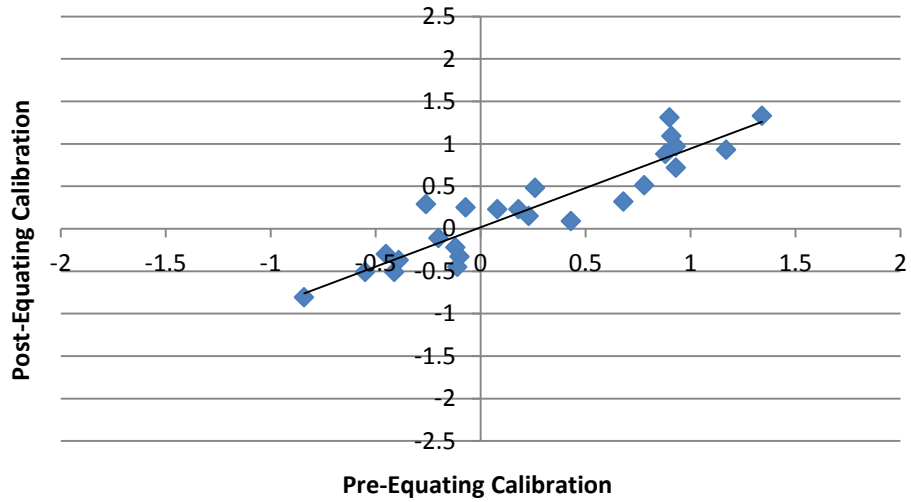
	3			4			5			6			7			8			11		
Item	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z
1	1.14	1.46	1.09	-0.84	-0.81	0.03	0.33	0.17	-0.33	0.34	0.42	0.34	-0.26	0.03	1.32	1.30	1.51	0.64	0.23	0.02	-0.49
2	-0.10	-0.37	-0.66	-0.07	0.25	1.14	0.13	-0.28	-1.25	0.79	0.90	0.40	-0.76	-0.15	2.99	0.58	0.41	-0.58	0.22	0.28	0.29
3	0.18	0.04	-0.27	0.88	0.88	-0.09	0.06	0.50	1.83	-0.56	-0.25	0.90	1.34	1.59	1.08	0.69	0.31	-1.25	-0.32	-0.29	0.18
4	0.71	0.91	0.73	-0.45	-0.30	0.48	-0.38	-0.46	-0.06	-0.17	0.04	0.66	-0.52	-1.02	-2.80	-0.16	0.14	0.92	-0.74	-0.43	0.96
5	0.31	0.59	0.98	-0.10	-0.33	-0.97	0.27	0.26	0.19	0.40	0.16	-0.48	0.97	1.04	0.15	1.90	2.20	0.92	-0.58	-0.92	-0.85
6	0.52	-0.16	-1.86	0.93	0.72	-0.88	0.40	-0.03	-1.34	0.61	0.22	-0.86	0.04	-0.09	-0.85	0.44	0.63	0.58	-0.24	-0.03	0.69
7	0.19	-0.15	-0.87	-0.12	-0.22	-0.45	0.43	0.15	-0.78	0.58	0.94	1.03	1.14	1.04	-0.68	-0.88	-0.86	0.00	0.86	0.61	-0.61
8	-0.04	-0.20	-0.32	-0.39	-0.37	0.00	0.37	0.21	-0.33	0.28	-0.09	-0.82	0.09	0.19	0.33	0.21	0.48	0.82	0.73	0.65	-0.12
9	-0.10	-0.22	-0.24	0.43	0.09	-1.36	-0.23	0.25	1.92	-0.23	-0.74	-1.17	-0.57	-0.32	1.09	0.80	0.61	-0.66	0.19	0.15	0.00
10	-0.83	-0.65	0.66	-0.20	-0.11	0.28	0.68	0.62	0.00	0.39	-0.07	-1.04	0.20	0.14	-0.47	0.80	0.71	-0.32	-0.17	0.13	0.95
11	-0.39	-0.45	-0.04	0.93	0.97	0.08	0.64	0.77	0.70	-0.52	-0.75	-0.48	-0.46	-0.43	0.00	1.44	2.06	1.96	-0.30	-1.46	-3.19
12	0.67	1.04	1.23	0.26	0.48	0.73	0.02	0.26	1.11	0.10	0.10	0.13	0.27	0.40	0.47	0.47	-0.01	-1.56	1.40	1.33	-0.08
13	-0.95	-1.07	-0.22	-0.41	-0.51	-0.48	-0.19	0.03	1.02	1.29	1.07	-0.43	1.00	1.04	0.03	1.51	1.53	0.04	0.33	0.77	1.38
14	1.07	1.02	0.00	0.90	1.31	1.47	-0.28	-0.41	-0.23	0.42	0.75	0.96	-0.10	-1.11	-5.38	1.70	1.27	-1.40	-0.83	-1.28	-1.18
15	-0.47	-0.73	-0.62	0.78	0.51	-1.10	-0.13	-0.24	-0.18	0.80	1.22	1.21	-0.06	0.08	0.54	0.46	0.61	0.45	-0.17	0.21	1.18
16	-0.92	-0.92	0.13	0.68	0.32	-1.45	-0.74	-0.25	1.97	0.80	1.15	1.02	-0.16	-0.06	0.31	0.46	0.39	-0.27	-0.11	0.48	1.81
17	-0.01	-0.31	-0.74	1.34	1.33	-0.12	-0.22	0.08	1.30	-0.14	-0.40	-0.54	-0.97	-1.11	-0.89	0.78	0.56	-0.72	-0.30	-0.03	0.87
18	0.77	1.15	1.27	0.08	0.23	0.51	0.11	0.48	1.58	0.16	0.53	1.07	-0.47	0.15	3.01	0.31	0.10	-0.71	-0.60	-1.25	-1.73
19	1.03	1.21	0.68	1.17	0.93	-0.96	0.98	1.06	0.49	0.77	0.72	0.00	-1.74	-1.94	-1.20	-0.41	-0.06	1.09	-0.67	-0.77	-0.17
20	-0.43	-0.48	0.01	0.91	1.09	0.61	0.92	0.79	-0.26	-0.03	0.20	0.71	0.54	0.14	-2.22	0.65	0.86	0.64	0.06	0.36	0.96
21	-0.54	-1.18	-1.75	0.18	0.23	0.10	0.39	0.23	-0.36	0.47	0.31	-0.28	-0.32	-0.33	-0.21	-0.50	-0.06	1.38	-0.56	-0.88	-0.80
22	0.18	0.62	1.43	-0.11	-0.45	-1.34	-0.73	-0.71	0.27	-0.25	0.05	0.87	-0.76	-1.08	-1.84	1.29	1.16	-0.44	-1.39	-1.43	-0.02

	3			4			5			6			7			8			11		
Item	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z
23	-0.22	0.32	1.74	-0.55	-0.51	0.10	0.64	0.19	-1.41	0.70	0.58	-0.19	1.40	1.22	-1.15	0.84	0.36	-1.58	-0.39	-0.35	0.21
24	0.13	0.14	0.18	0.23	0.15	-0.39	0.21	0.32	0.63	0.48	0.25	-0.45	-1.11	-1.25	-0.87	-0.41	-0.82	-1.34	-0.39	-0.44	-0.05
25	-0.75	-1.17	-1.09	-0.26	0.29	2.03	-1.00	-1.49	-1.53	0.19	0.10	-0.10	0.70	0.78	0.25	-1.27	-1.08	0.56	-0.65	-0.56	0.35
Mean	0.05	0.02		0.25	0.25		0.11	0.10		0.31	0.30		-0.02	-0.04		0.52	0.52		-0.18	-0.21	
Shift	0.03			0.00			0.01			0.01			0.02			0.00			0.03		
Corr	0.92			0.92			0.84			0.84			0.92			0.93			0.86		
SD	0.63	0.80		0.61	0.61		0.51	0.53		0.45	0.54		0.80	0.88		0.80	0.82		0.59	0.74	
Ratio	0.79			1.00			0.96			0.84			0.92			0.97			0.80		

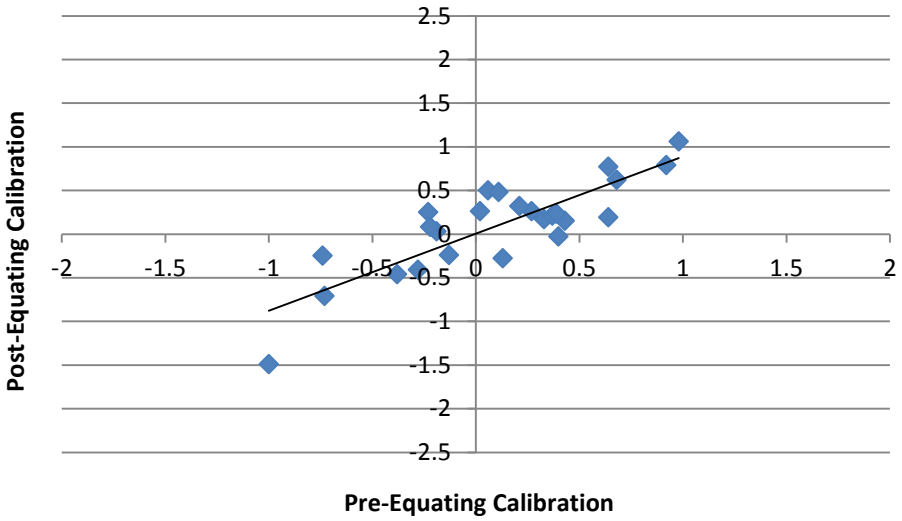
NeSA-AAR Grade 3 Pre- and Post-Equating Calibrations



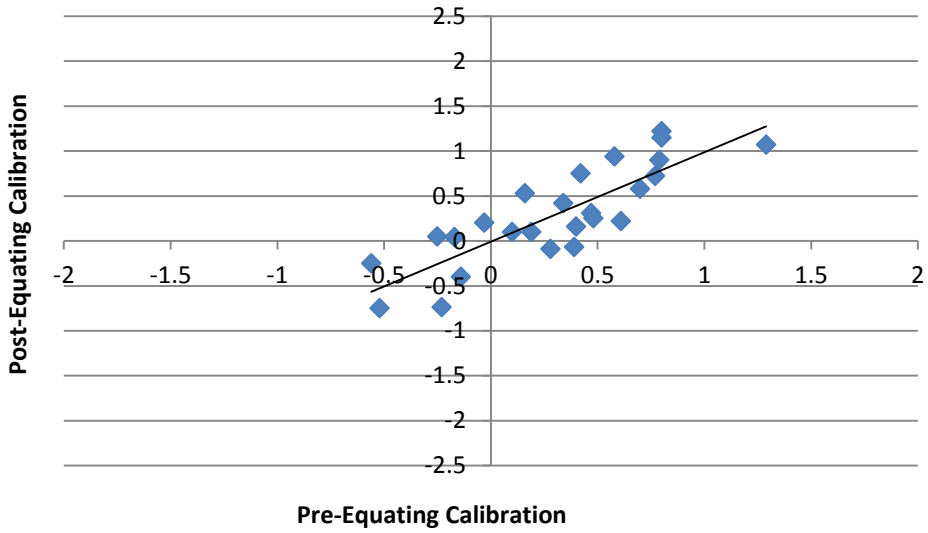
NeSA-AAR Grade 4 Pre- and Post-Equating Calibrations



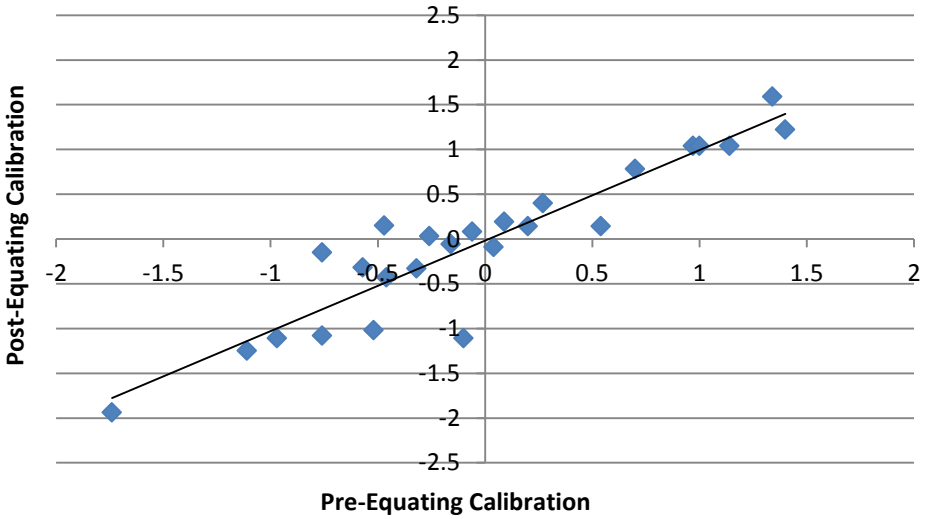
NeSA-AAR Grade 5 Pre- and Post-Equating Calibrations



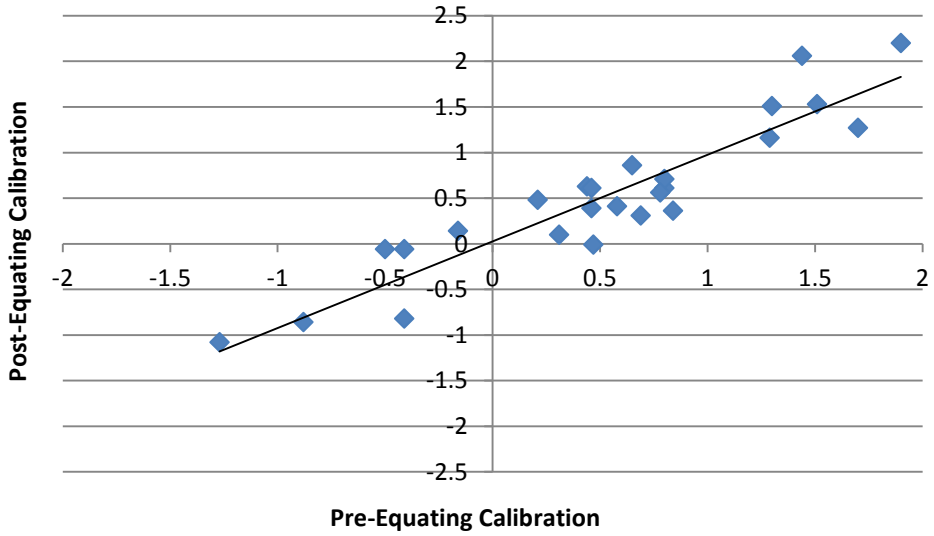
NeSA-AAR Grade 6 Pre- and Post-Equating Calibrations



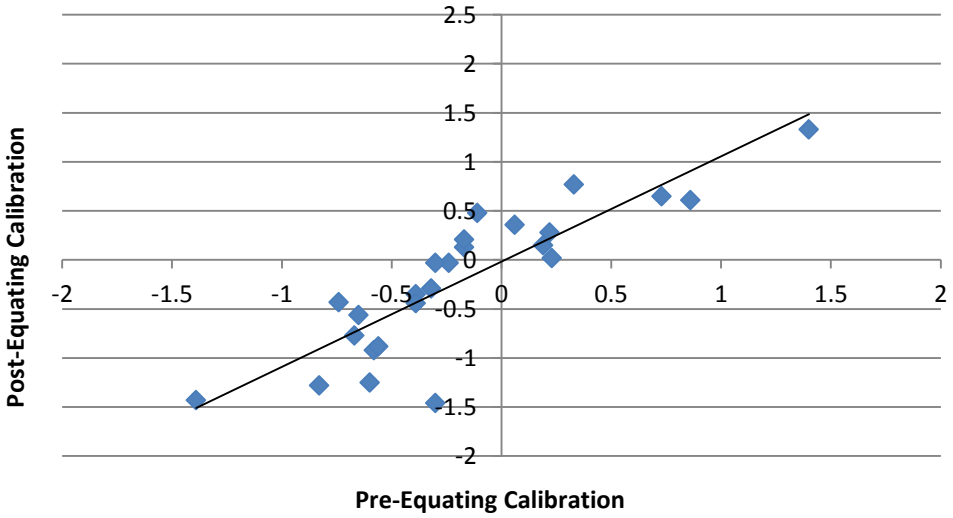
NeSA-AAR Grade 7 Pre- and Post-Equating Calibrations



NeSA-AAR Grade 8 Pre- and Post-Equating Calibrations



NeSA-AAR Grade 11 Pre- and Post-Equating Calibrations



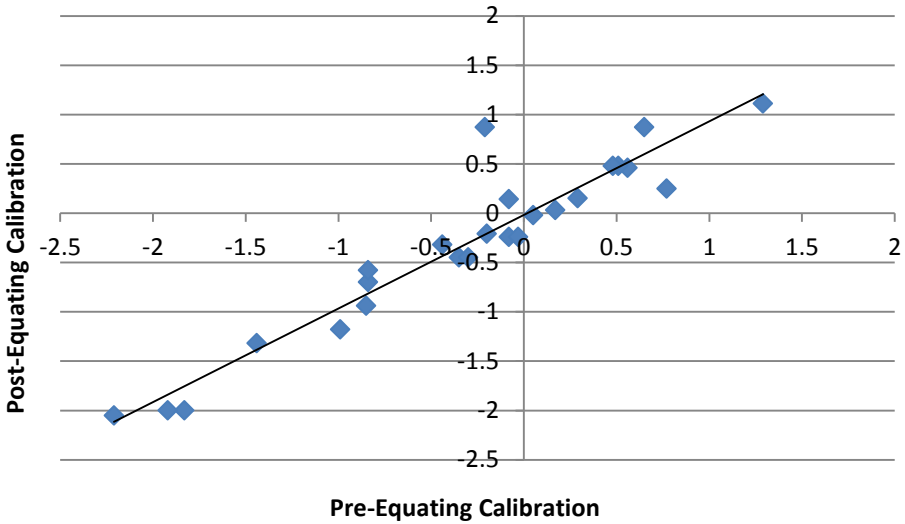
Appendix O: Mathematics Pre- and Post-Equating Summary

The Pre- values were taken from the calibrated item and used to create the Raw-to-Scale Conversion Tables. The Post- values were taken directly from unanchored calibration runs.
The statistics of Mean, Shift, Corr, SD, and Ratio are computed from the items that have both Pre and Post *logit* values.

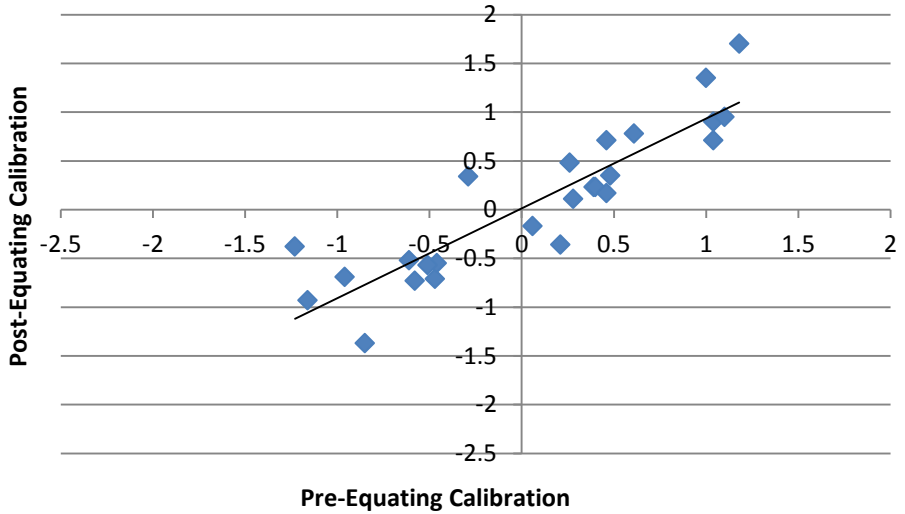
	3			4			5			6			7			8			11		
Item	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z
1	-1.83	-2.00	-0.44	-0.29	0.34	2.20	-0.20	-0.46	-1.47	-0.86	-0.71	0.56	-0.09	-0.08	0.20	0.28	0.10	-0.59	-1.60	-2.10	-1.94
2	-0.08	-0.24	-0.42	0.21	-0.36	-1.37	0.63	0.77	0.54	-0.04	0.12	0.61	1.03	0.93	-0.35	-0.16	-0.76	-1.79	0.31	0.65	0.95
3	-0.84	-0.70	1.09	-0.61	-0.52	0.59	-0.03	0.01	0.02	-0.96	-1.12	-0.70	-0.51	-0.56	-0.08	-0.02	0.30	0.80	0.15	0.30	0.30
4	-2.21	-2.05	1.18	-1.16	-0.93	1.00	-0.22	-0.36	-0.88	-0.76	-0.61	0.56	-0.94	-0.83	0.73	-1.47	-1.52	-0.23	-1.58	-1.36	0.54
5	0.77	0.25	-2.18	0.06	-0.17	-0.35	1.03	1.09	0.10	1.62	1.22	-1.66	-1.11	-1.31	-0.82	0.22	0.56	0.89	0.04	0.11	0.02
6	1.29	1.11	-0.52	0.28	0.11	-0.19	0.60	0.40	-1.19	1.21	1.19	-0.12	-0.17	0.13	1.63	0.11	-0.03	-0.50	0.04	0.30	0.70
7	-1.44	-1.32	0.95	1.00	1.35	1.37	-1.23	-1.30	-0.52	0.89	1.23	1.32	0.72	0.69	-0.01	-0.51	-0.69	-0.62	-1.14	-1.01	0.25
8	0.05	-0.02	0.06	-0.58	-0.73	-0.11	0.11	-0.17	-1.53	-0.83	-0.49	1.34	0.59	0.75	0.91	-0.38	-0.29	0.19	-0.29	-0.08	0.50
9	-0.35	-0.45	-0.12	-0.47	-0.71	-0.39	-0.42	-0.29	0.47	-0.39	-0.76	-1.55	-1.52	-1.47	0.39	-0.08	-0.23	-0.51	0.60	0.75	0.29
10	-0.44	-0.32	0.98	0.39	0.23	-0.15	-1.19	-1.12	0.17	0.27	0.22	-0.28	0.36	0.51	0.86	1.36	1.39	0.00	-0.30	-0.16	0.26
11	-0.08	0.14	1.49	0.40	0.23	-0.18	-1.46	-1.40	0.11	0.83	0.87	0.12	0.77	0.19	-2.72	-0.15	-0.56	-1.27	-0.53	-0.51	-0.14
12	0.29	0.15	-0.36	1.18	1.70	1.87	0.48	0.42	-0.48	-0.08	0.15	0.88	-0.72	-0.81	-0.31	0.10	0.29	0.46	0.62	0.09	-2.04
13	0.17	0.03	-0.30	1.04	0.90	-0.10	0.19	0.42	0.95	-1.56	-1.42	0.53	0.11	-0.02	-0.48	-0.53	-0.18	0.91	-0.46	-0.03	1.24
14	0.65	0.87	1.44	-1.23	-0.38	2.85	0.29	0.24	-0.43	-0.99	-1.02	-0.19	0.09	0.32	1.30	1.39	1.14	-0.83	-0.94	-0.90	-0.08
15	-0.20	-0.21	0.32	0.46	0.71	1.06	-0.59	-0.52	0.16	0.03	-0.15	-0.77	0.28	0.79	2.67	-1.26	-1.28	-0.15	-0.78	-0.75	-0.12
16	-0.03	-0.24	-0.67	1.04	0.71	-0.68	0.93	1.32	1.76	0.62	0.80	0.68	0.13	0.20	0.50	-0.26	-0.20	0.06	-0.69	-0.99	-1.23
17	-0.85	-0.94	-0.07	-0.96	-0.69	1.14	0.85	0.52	-1.82	0.07	0.26	0.71	-0.35	-0.03	1.76	-0.05	0.22	0.69	0.43	0.34	-0.52
18	0.56	0.46	-0.13	-0.46	-0.55	0.06	-0.17	-0.14	-0.02	-0.01	0.18	0.75	-0.10	-0.18	-0.27	0.91	0.65	-0.84	-0.38	-0.56	-0.85
19	0.51	0.48	0.22	0.46	0.17	-0.54	0.72	0.60	-0.77	0.16	0.37	0.82	-1.48	-1.55	-0.19	0.16	0.24	0.13	-0.20	-0.73	-2.06
20	0.48	0.48	0.37	0.26	0.48	0.96	-1.11	-0.94	0.63	0.20	0.37	0.65	-0.74	-0.55	1.11	-0.99	-1.50	-1.55	0.33	-0.02	-1.40
21	-0.99	-1.18	-0.53	1.10	0.95	-0.10	-0.31	-0.20	0.34	0.39	0.31	-0.36	0.69	0.35	-1.55	-1.13	-0.88	0.61	0.85	1.11	0.68
22	-1.92	-2.00	0.00	0.61	0.78	0.84	1.60	1.49	-0.73	0.39	0.17	-0.92	0.73	0.64	-0.31	0.19	0.47	0.72	0.44	0.36	-0.48

	3			4			5			6			7			8			11		
Item	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z
23	-0.84	-0.58	1.64	-0.85	-1.37	-1.20	-1.13	-0.56	2.63	0.16	-0.20	-1.48	-1.00	-1.11	-0.42	-0.38	-0.33	0.06	0.33	0.11	-0.98
24	-0.21	0.87	5.68	-0.51	-0.57	0.11	-0.79	-1.20	-2.19	0.66	0.52	-0.60	-1.28	-1.64	-1.62	1.24	1.27	0.00	0.15	0.11	-0.38
25	-0.30	-0.45	-0.37	0.48	0.35	-0.06	-0.19	-0.12	0.20	0.05	-0.15	-0.83	-0.15	0.19	1.81	0.26	0.42	0.35	-1.46	-1.12	0.96
26				0.13	0.22	0.57	0.35	-0.15	-2.65	-0.10	-0.02	0.30	-0.15	-0.90	-3.59	1.09	1.64	1.46	-0.83	-0.63	0.47
27				-0.65	-0.11	1.92	-0.90	-0.44	2.08	-0.57	-0.65	-0.35	0.20	0.36	0.93	0.68	0.38	-0.96	0.77	1.17	1.15
28				0.65	0.76	0.66	-0.68	-0.44	0.98	0.70	0.61	-0.41	0.44	0.26	-0.76	0.82	0.44	-1.18	-1.04	-0.98	-0.02
29				-0.29	-0.92	-1.54	-0.38	-0.53	-0.92	-0.46	-0.31	0.55	0.15	0.36	1.18	-0.59	-0.82	-0.74	-0.64	-1.83	-4.30
30				0.37	-0.07	-0.97	0.16	0.13	-0.33	0.66	0.38	-1.16	-0.75	-0.78	0.01	-0.53	-0.26	0.67	-1.88	-1.78	0.10
Mean	-0.31	-0.31		0.07	0.06		-0.10	-0.10		0.04	0.05		-0.16	-0.17		0.01	0.00		-0.32	-0.34	
Shift	0.00			0.00			-0.01			0.00			0.01			0.01			0.02		
Corr	0.95			0.87			0.95			0.96			0.94			0.94			0.91		
SD	0.88	0.88		0.70	0.73		0.77	0.74		0.71	0.69		0.71	0.76		0.75	0.80		0.76	0.84	
Ratio	1.00			0.96			1.04			1.04			0.94			0.94			0.90		

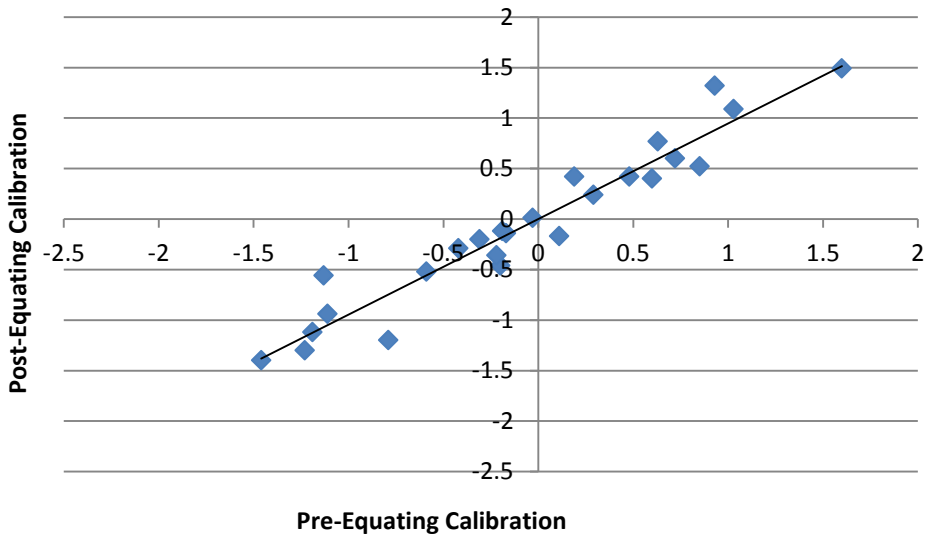
NeSA-AAM Grade 3 Pre- and Post-Equating Calibrations



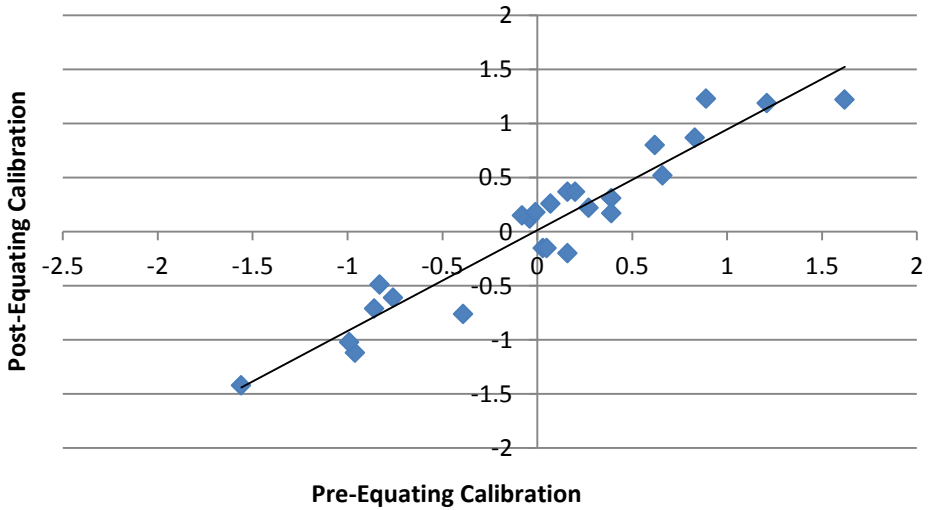
NeSA-AAM Grade 4 Pre- and Post-Equating Calibrations



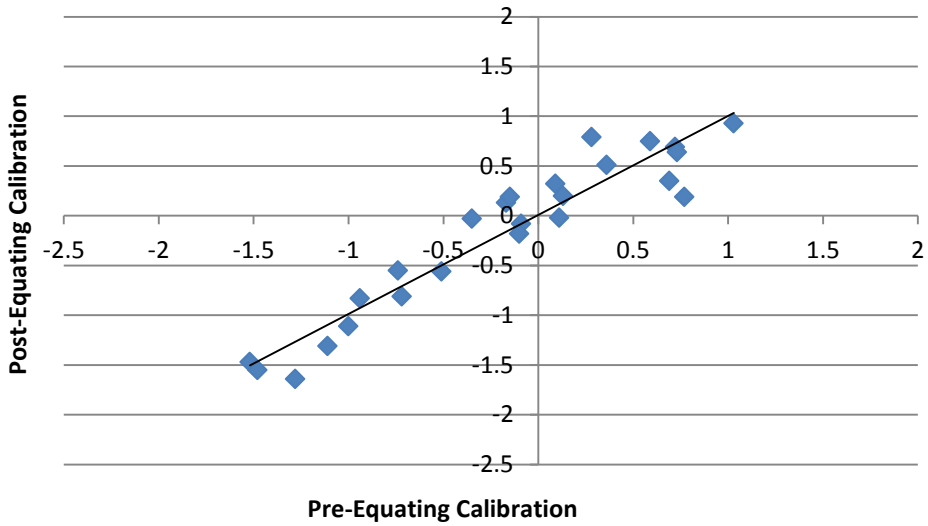
NeSA-AAM Grade 5 Pre- and Post-Equating Calibrations



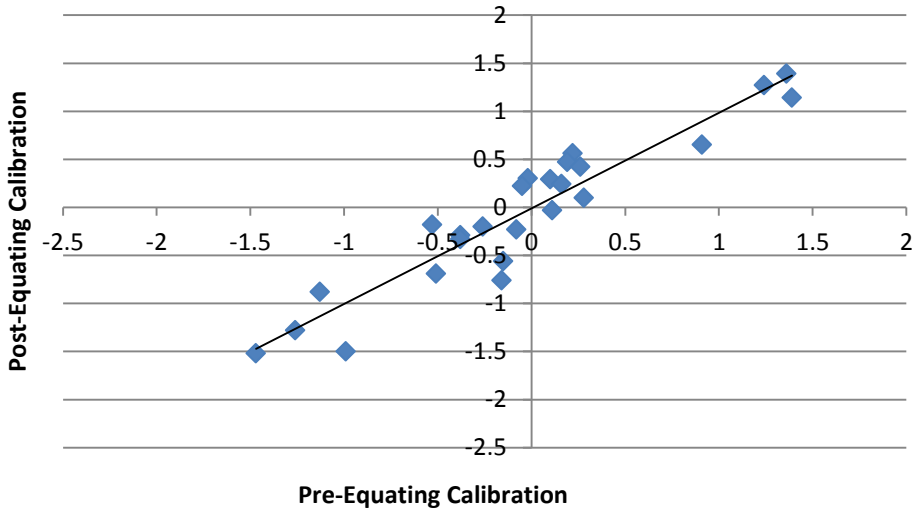
NeSA-AAM Grade 6 Pre- and Post-Equating Calibrations

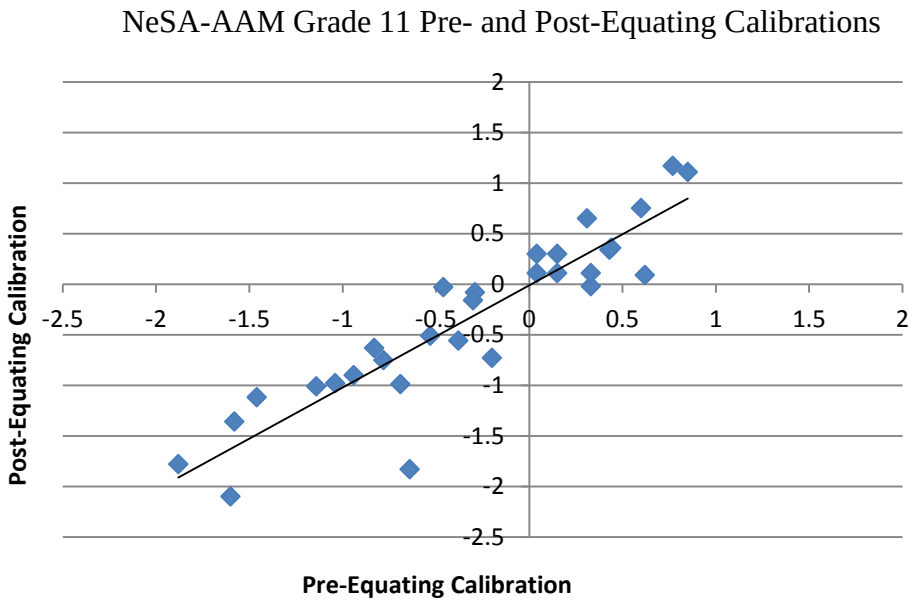


NeSA-AAM Grade 7 Pre- and Post-Equating Calibrations



NeSA-AAM Grade 8 Pre- and Post-Equating Calibrations




NeSA-AAM Grade 11 Pre- and Post-Equating Calibrations
Post-Equating Calibration
Pre-Equating Calibration
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-2.5
-2
-1.5
-1
-0.5
0
0.5
1
1.5
2

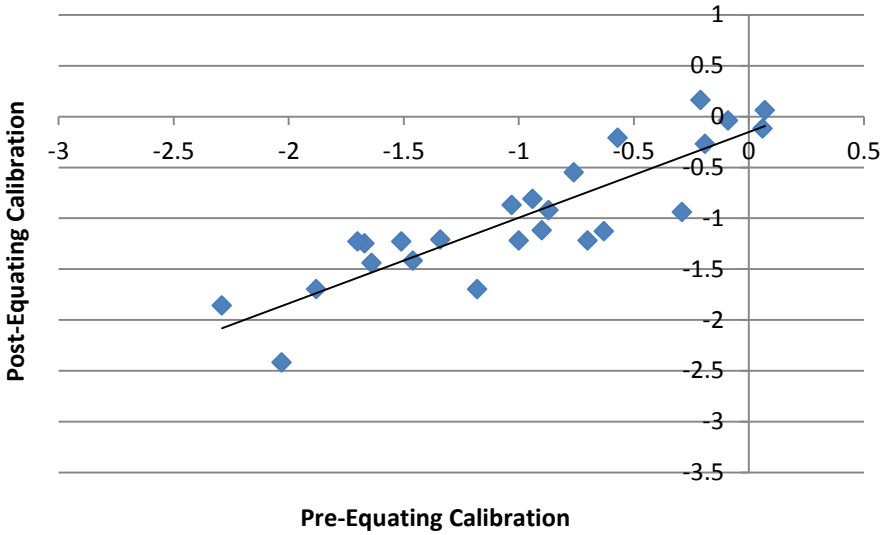
Appendix P: Science Pre- and Post-Equating Summary

The Pre- values were taken from the calibrated item and used to create the Raw-to-Scale Conversion Tables. The Post- values were taken directly from unanchored calibration runs. The statistics of Mean, Shift, Corr, SD, and Ratio are computed from the items that have both Pre and Post *logit* values.

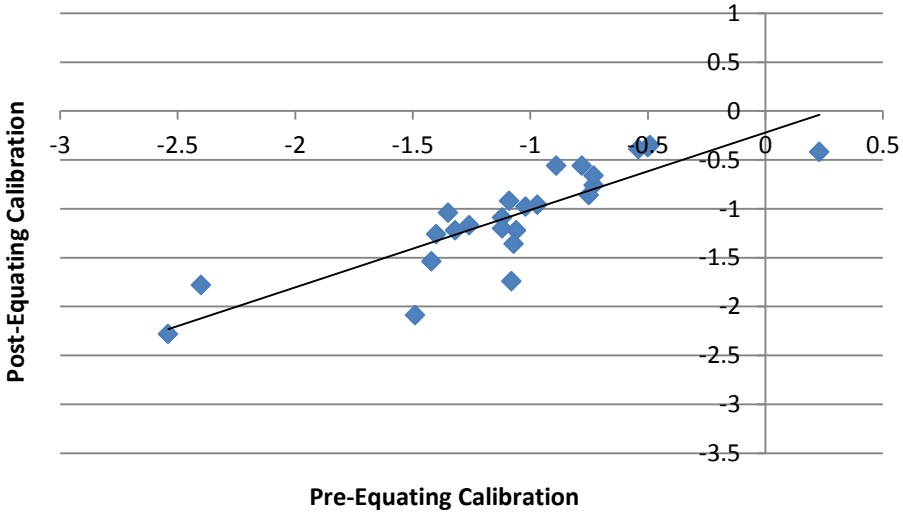
	5			8			11		
Item	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z
1	-0.19	-0.27	-0.42	-1.06	-1.22	-1.20	-0.95	-0.65	0.89
2	-1.03	-0.87	0.34	-0.78	-0.56	0.79	-1.90	-1.94	-0.02
3	-0.57	-0.21	1.01	-1.40	-1.26	0.40	-0.92	-0.47	1.31
4	-0.21	0.16	1.01	-1.08	-1.74	-3.74	-1.50	-1.26	0.74
5	-0.70	-1.22	-1.85	-0.49	-0.35	0.34	-1.94	-1.91	0.17
6	-1.00	-1.22	-0.84	-1.12	-1.09	-0.17	-0.92	-1.19	-0.62
7	-0.63	-1.13	-1.74	-0.50	-0.37	0.34	-0.13	-0.76	-1.61
8	-0.90	-1.12	-0.89	-1.26	-1.17	0.10	-1.20	-1.13	0.27
9	-2.29	-1.86	1.23	-0.97	-0.96	-0.31	-1.36	-1.48	-0.25
10	-1.34	-1.21	0.28	-0.54	-0.39	0.45	-0.95	-0.79	0.52
11	0.06	-0.12	-0.73	-0.73	-0.76	-0.53	-1.87	-1.91	-0.02
12	-1.88	-1.70	0.44	-1.49	-2.09	-3.45	-0.55	-0.52	0.18
13	0.07	0.06	-0.20	0.23	-0.42	-3.68	-1.17	-0.91	0.81
14	-0.94	-0.81	0.27	-1.42	-1.54	-0.98	-0.39	0.36	2.13
15	-0.76	-0.55	0.51	-2.40	-1.78	2.88	-1.54	-1.60	-0.06
16	-1.67	-1.25	1.21	-0.73	-0.66	0.00	-1.27	-0.47	2.26
17	-1.51	-1.23	0.76	-1.12	-1.20	-0.77	-0.81	-0.79	0.14
18	-0.09	-0.04	0.00	-1.32	-1.22	0.21	-1.57	-1.72	-0.33
19	-0.87	-0.92	-0.31	-1.09	-0.92	0.54	-0.71	-0.47	0.73
20	-1.70	-1.23	1.37	-1.07	-1.36	-1.86	-0.21	-0.27	-0.07
21	-1.18	-1.70	-1.81	-1.02	-0.98	-0.15	0.07	-0.20	-0.66
22	-1.46	-1.42	-0.03	-0.89	-0.56	1.36	-1.14	-0.86	0.84
23	-0.29	-0.94	-2.27	-2.54	-2.28	1.01	-2.73	-3.23	-1.25
24	-1.64	-1.44	0.47	-1.35	-1.04	1.27	-1.19	-2.35	-3.06
25	-2.03	-2.42	-1.43	-0.75	-0.86	-0.91	-1.53	-1.96	-1.05
26							-1.42	-1.96	-1.38
27							-1.80	-2.13	-0.81
28							-1.66	-1.69	0.02
29							-1.35	-1.24	0.39
30							-1.47	-1.57	-0.18
Mean	-0.99	-0.99		-1.08	-1.07		-1.20	-1.24	
Shift	0.00			0.00			0.03		
Corr	0.88			0.85			0.86		

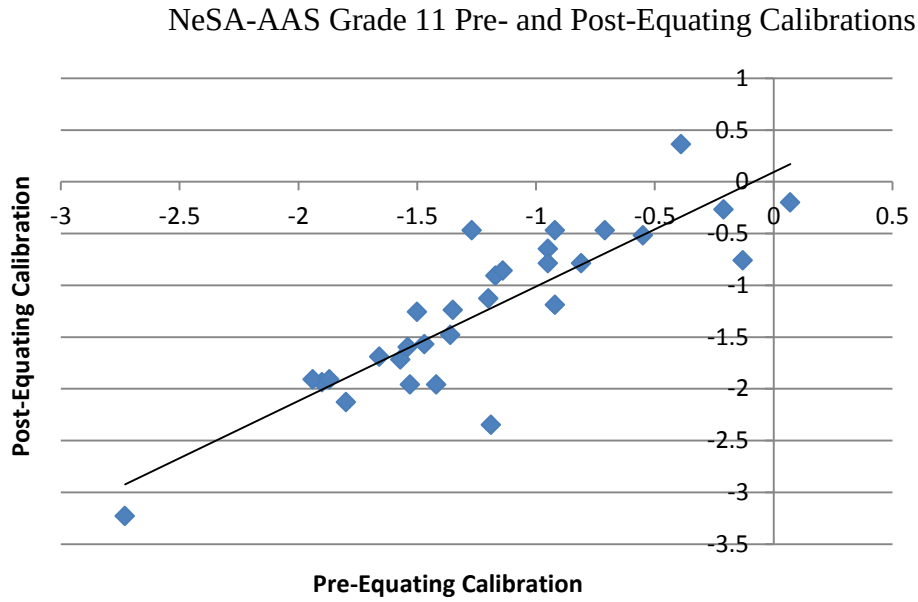
	5			8			11		
Item	Pre	Post	Z	Pre	Post	Z	Pre	Post	Z
SD	0.67	0.65		0.56	0.53		0.60	0.77	
Ratio	1.04			1.07			0.78		

NeSA-AAS Grade 5 Pre- and Post-Equating Calibrations



NeSA-AAS Grade 8 Pre- and Post-Equating Calibrations




NeSA-AAS Grade 11 Pre- and Post-Equating Calibrations
Post-Equating Calibration
Pre-Equating Calibration
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
-3
-2.5
-2
-1.5
-1
-0.5
0
0.5

Appendix Q: Reading Raw-to-Scale Conversion Tables and Distributions of Ability

The charts are simple displays of Scale Score, Raw Score, and percentile rank. The raw score and percentile rank for any Scale Score can be read directly from chart.

The proformance levels *Meets Standards* begins at a Scale Score of 85 and *Exceeds Standards* begins at 135. *Below Standards* is a Scale Score of 84 and below.

The table is a traditional table that was used to create the chart. This table would be used to retrieve the Scale Score or percentile rank for a given raw score. It also includes counts and percentages at each score.

Grade 3

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	3	Read	0	20	7.1	20	7.1	4	1	58
Spr 2014	3	Read	1	1	0.4	21	7.5	7	1	32
Spr 2014	3	Read	2	0	0.0	21	7.5	7	1	23
Spr 2014	3	Read	3	2	0.7	23	8.2	8	11	20
Spr 2014	3	Read	4	0	0.0	23	8.2	8	22	18
Spr 2014	3	Read	5	3	1.1	26	9.3	9	31	16
Spr 2014	3	Read	6	2	0.7	28	10.0	10	39	15
Spr 2014	3	Read	7	6	2.1	34	12.1	11	46	14
Spr 2014	3	Read	8	4	1.4	38	13.5	13	52	14
Spr 2014	3	Read	9	5	1.8	43	15.3	14	58	14
Spr 2014	3	Read	10	13	4.6	56	19.9	18	64	13
Spr 2014	3	Read	11	11	3.9	67	23.8	22	70	13
Spr 2014	3	Read	12	11	3.9	78	27.8	26	75	13
Spr 2014	3	Read	13	7	2.5	85	30.2	29	81	13
Spr 2014	3	Read	14	10	3.6	95	33.8	32	86	13
Spr 2014	3	Read	15	19	6.8	114	40.6	37	92	13
Spr 2014	3	Read	16	9	3.2	123	43.8	42	98	14
Spr 2014	3	Read	17	11	3.9	134	47.7	46	104	14
Spr 2014	3	Read	18	8	2.8	142	50.5	49	110	15
Spr 2014	3	Read	19	12	4.3	154	54.8	53	117	15
Spr 2014	3	Read	20	15	5.3	169	60.1	57	125	16
Spr 2014	3	Read	21	25	8.9	194	69.0	65	134	18
Spr 2014	3	Read	22	23	8.2	217	77.2	73	145	20
Spr 2014	3	Read	23	32	11.4	249	88.6	83	160	23
Spr 2014	3	Read	24	19	6.8	268	95.4	92	183	32
Spr 2014	3	Read	25	13	4.6	281	100.0	98	200	58

Grade 4

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	4	Read	0	24	7.2	24	7.2	4	1	59
Spr 2014	4	Read	1	1	0.3	25	7.5	7	1	33
Spr 2014	4	Read	2	0	0.0	25	7.5	8	1	24
Spr 2014	4	Read	3	3	0.9	28	8.4	8	16	20
Spr 2014	4	Read	4	0	0.0	28	8.4	8	27	18
Spr 2014	4	Read	5	4	1.2	32	9.6	9	36	16
Spr 2014	4	Read	6	6	1.8	38	11.4	11	44	15
Spr 2014	4	Read	7	8	2.4	46	13.9	13	52	15
Spr 2014	4	Read	8	11	3.3	57	17.2	16	58	14
Spr 2014	4	Read	9	10	3.0	67	20.2	19	64	14
Spr 2014	4	Read	10	14	4.2	81	24.4	22	70	14
Spr 2014	4	Read	11	13	3.9	94	28.3	26	76	13
Spr 2014	4	Read	12	11	3.3	105	31.6	30	81	13
Spr 2014	4	Read	13	14	4.2	119	35.8	34	87	13
Spr 2014	4	Read	14	15	4.5	134	40.4	38	93	13
Spr 2014	4	Read	15	20	6.0	154	46.4	43	98	14
Spr 2014	4	Read	16	15	4.5	169	50.9	49	104	14
Spr 2014	4	Read	17	17	5.1	186	56.0	53	110	14
Spr 2014	4	Read	18	19	5.7	205	61.7	59	117	15
Spr 2014	4	Read	19	20	6.0	225	67.8	65	124	16
Spr 2014	4	Read	20	10	3.0	235	70.8	69	132	17
Spr 2014	4	Read	21	25	7.5	260	78.3	75	141	18
Spr 2014	4	Read	22	24	7.2	284	85.5	82	153	20
Spr 2014	4	Read	23	17	5.1	301	90.7	88	167	24
Spr 2014	4	Read	24	13	3.9	314	94.6	93	192	33
Spr 2014	4	Read	25	18	5.4	332	100.0	97	200	59

Grade 5

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	5	Read	0	26	8.0	26	8.0	4	1	72
Spr 2014	5	Read	1	0	0.0	26	8.0	8	1	40
Spr 2014	5	Read	2	2	0.6	28	8.6	8	1	29
Spr 2014	5	Read	3	1	0.3	29	8.9	9	1	24
Spr 2014	5	Read	4	1	0.3	30	9.2	9	10	22
Spr 2014	5	Read	5	3	0.9	33	10.1	10	21	20
Spr 2014	5	Read	6	3	0.9	36	11.0	11	31	19

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	5	Read	7	6	1.8	42	12.8	12	40	18
Spr 2014	5	Read	8	6	1.8	48	14.7	14	47	17
Spr 2014	5	Read	9	9	2.8	57	17.4	16	55	17
Spr 2014	5	Read	10	14	4.3	71	21.7	20	62	16
Spr 2014	5	Read	11	10	3.1	81	24.8	23	69	16
Spr 2014	5	Read	12	12	3.7	93	28.4	27	75	16
Spr 2014	5	Read	13	17	5.2	110	33.6	31	82	16
Spr 2014	5	Read	14	16	4.9	126	38.5	36	89	16
Spr 2014	5	Read	15	9	2.8	135	41.3	40	95	16
Spr 2014	5	Read	16	12	3.7	147	45.0	43	102	17
Spr 2014	5	Read	17	14	4.3	161	49.2	47	110	17
Spr 2014	5	Read	18	18	5.5	179	54.7	52	117	18
Spr 2014	5	Read	19	16	4.9	195	59.6	57	126	19
Spr 2014	5	Read	20	19	5.8	214	65.4	63	135	20
Spr 2014	5	Read	21	16	4.9	230	70.3	68	146	22
Spr 2014	5	Read	22	28	8.6	258	78.9	75	160	24
Spr 2014	5	Read	23	23	7.0	281	85.9	82	178	29
Spr 2014	5	Read	24	32	9.8	313	95.7	91	200	40
Spr 2014	5	Read	25	14	4.3	327	100.0	98	200	72

Grade 6

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	6	Read	0	13	4.1	13	4.1	2	1	55
Spr 2014	6	Read	1	0	0.0	13	4.1	4	1	31
Spr 2014	6	Read	2	0	0.0	13	4.1	4	6	22
Spr 2014	6	Read	3	1	0.3	14	4.4	4	19	19
Spr 2014	6	Read	4	1	0.3	15	4.7	5	29	17
Spr 2014	6	Read	5	3	0.9	18	5.6	5	38	15
Spr 2014	6	Read	6	5	1.6	23	7.2	6	45	14
Spr 2014	6	Read	7	8	2.5	31	9.7	8	52	14
Spr 2014	6	Read	8	6	1.9	37	11.6	11	58	13
Spr 2014	6	Read	9	11	3.4	48	15.0	13	63	13
Spr 2014	6	Read	10	15	4.7	63	19.7	17	68	12
Spr 2014	6	Read	11	11	3.4	74	23.2	21	74	12
Spr 2014	6	Read	12	13	4.1	87	27.3	25	79	12
Spr 2014	6	Read	13	16	5.0	103	32.3	30	84	12
Spr 2014	6	Read	14	16	5.0	119	37.3	35	89	12

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	6	Read	15	10	3.1	129	40.4	39	94	12
Spr 2014	6	Read	16	6	1.9	135	42.3	41	99	13
Spr 2014	6	Read	17	14	4.4	149	46.7	45	105	13
Spr 2014	6	Read	18	12	3.8	161	50.5	49	111	14
Spr 2014	6	Read	19	22	6.9	183	57.4	54	117	14
Spr 2014	6	Read	20	15	4.7	198	62.1	60	124	15
Spr 2014	6	Read	21	23	7.2	221	69.3	66	133	17
Spr 2014	6	Read	22	22	6.9	243	76.2	73	143	19
Spr 2014	6	Read	23	26	8.2	269	84.3	80	157	22
Spr 2014	6	Read	24	32	10.0	301	94.4	89	179	31
Spr 2014	6	Read	25	18	5.6	319	100.0	97	200	55

Grade 7

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	7	Read	0	23	6.9	23	6.9	3	1	69
Spr 2014	7	Read	1	1	0.3	24	7.2	7	1	39
Spr 2014	7	Read	2	2	0.6	26	7.8	7	1	28
Spr 2014	7	Read	3	0	0.0	26	7.8	8	1	24
Spr 2014	7	Read	4	1	0.3	27	8.1	8	1	21
Spr 2014	7	Read	5	2	0.6	29	8.7	8	7	20
Spr 2014	7	Read	6	8	2.4	37	11.1	10	17	19
Spr 2014	7	Read	7	7	2.1	44	13.2	12	26	18
Spr 2014	7	Read	8	8	2.4	52	15.6	14	34	17
Spr 2014	7	Read	9	10	3.0	62	18.6	17	41	17
Spr 2014	7	Read	10	3	0.9	65	19.5	19	49	16
Spr 2014	7	Read	11	13	3.9	78	23.4	21	56	16
Spr 2014	7	Read	12	10	3.0	88	26.3	25	63	16
Spr 2014	7	Read	13	8	2.4	96	28.7	28	70	16
Spr 2014	7	Read	14	9	2.7	105	31.4	30	77	16
Spr 2014	7	Read	15	9	2.7	114	34.1	33	84	16
Spr 2014	7	Read	16	13	3.9	127	38.0	36	91	17
Spr 2014	7	Read	17	15	4.5	142	42.5	40	99	17
Spr 2014	7	Read	18	12	3.6	154	46.1	44	107	18
Spr 2014	7	Read	19	19	5.7	173	51.8	49	116	19
Spr 2014	7	Read	20	25	7.5	198	59.3	56	126	20
Spr 2014	7	Read	21	27	8.1	225	67.4	63	137	21
Spr 2014	7	Read	22	29	8.7	254	76.0	72	151	24

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	7	Read	23	36	10.8	290	86.8	81	169	28
Spr 2014	7	Read	24	24	7.2	314	94.0	90	197	39
Spr 2014	7	Read	25	20	6.0	334	100.0	97	200	69

Grade 8

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	8	Read	0	27	7.9	27	7.9	4	1	56
Spr 2014	8	Read	1	2	0.6	29	8.5	8	1	32
Spr 2014	8	Read	2	0	0.0	29	8.5	9	1	23
Spr 2014	8	Read	3	1	0.3	30	8.8	9	12	20
Spr 2014	8	Read	4	2	0.6	32	9.4	9	23	17
Spr 2014	8	Read	5	3	0.9	35	10.3	10	32	16
Spr 2014	8	Read	6	9	2.6	44	12.9	12	40	15
Spr 2014	8	Read	7	6	1.8	50	14.7	14	47	14
Spr 2014	8	Read	8	9	2.6	59	17.4	16	54	14
Spr 2014	8	Read	9	14	4.1	73	21.5	19	60	14
Spr 2014	8	Read	10	10	2.9	83	24.4	23	66	13
Spr 2014	8	Read	11	13	3.8	96	28.2	26	72	13
Spr 2014	8	Read	12	10	2.9	106	31.2	30	77	13
Spr 2014	8	Read	13	9	2.6	115	33.8	33	83	13
Spr 2014	8	Read	14	8	2.4	123	36.2	35	88	13
Spr 2014	8	Read	15	10	2.9	133	39.1	38	94	13
Spr 2014	8	Read	16	17	5.0	150	44.1	42	100	13
Spr 2014	8	Read	17	14	4.1	164	48.2	46	106	14
Spr 2014	8	Read	18	7	2.1	171	50.3	49	112	14
Spr 2014	8	Read	19	23	6.8	194	57.1	54	119	15
Spr 2014	8	Read	20	17	5.0	211	62.1	60	127	16
Spr 2014	8	Read	21	16	4.7	227	66.8	64	136	17
Spr 2014	8	Read	22	41	12.1	268	78.8	73	147	19
Spr 2014	8	Read	23	31	9.1	299	87.9	83	161	23
Spr 2014	8	Read	24	26	7.6	325	95.6	92	185	32
Spr 2014	8	Read	25	15	4.4	340	100.0	98	200	56

Grade 11

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	11	Read	0	18	6.1	18	6.1	3	1	58
Spr 2014	11	Read	1	2	0.7	20	6.8	6	1	33
Spr 2014	11	Read	2	1	0.3	21	7.1	7	1	24
Spr 2014	11	Read	3	1	0.3	22	7.4	7	2	20
Spr 2014	11	Read	4	0	0.0	22	7.4	7	14	18
Spr 2014	11	Read	5	1	0.3	23	7.8	8	23	16
Spr 2014	11	Read	6	5	1.7	28	9.5	9	30	15
Spr 2014	11	Read	7	5	1.7	33	11.1	10	37	15
Spr 2014	11	Read	8	5	1.7	38	12.8	12	44	14
Spr 2014	11	Read	9	10	3.4	48	16.2	15	50	14
Spr 2014	11	Read	10	10	3.4	58	19.6	18	56	13
Spr 2014	11	Read	11	8	2.7	66	22.3	21	61	13
Spr 2014	11	Read	12	7	2.4	73	24.7	23	67	13
Spr 2014	11	Read	13	6	2.0	79	26.7	26	73	13
Spr 2014	11	Read	14	5	1.7	84	28.4	28	78	13
Spr 2014	11	Read	15	10	3.4	94	31.8	30	84	14
Spr 2014	11	Read	16	7	2.4	101	34.1	33	90	14
Spr 2014	11	Read	17	5	1.7	106	35.8	35	96	14
Spr 2014	11	Read	18	8	2.7	114	38.5	37	102	15
Spr 2014	11	Read	19	12	4.1	126	42.6	41	110	15
Spr 2014	11	Read	20	20	6.8	146	49.3	46	118	16
Spr 2014	11	Read	21	23	7.8	169	57.1	53	127	18
Spr 2014	11	Read	22	27	9.1	196	66.2	62	138	20
Spr 2014	11	Read	23	38	12.8	234	79.1	73	153	24
Spr 2014	11	Read	24	34	11.5	268	90.5	85	177	33
Spr 2014	11	Read	25	28	9.5	296	100.0	95	200	58

Appendix R: Mathematics Raw-to-Scale Conversion Tables and Distributions of Ability

The charts are simple displays of Scale Score, Raw Score, and percentile rank. The raw score and percentile rank for any Scale Score can be read directly from chart.

The proformance levels *Meets Standards* begins at a Scale Score of 85 and *Exceeds Standards* begins at 135. *Below Standards* is a Scale Score of 84 and below.

The table is a traditional table that was used to create the chart. This table would be used to retrieve the Scale Score or percentile rank for a given raw score. It also includes counts and percentages at each score.

Grade 3

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	3	Math	0	16	5.8	16	5.8	3	1	55
Spr 2014	3	Math	1	4	1.5	20	7.3	7	1	31
Spr 2014	3	Math	2	2	0.7	22	8.0	8	1	23
Spr 2014	3	Math	3	0	0.0	22	8.0	8	11	19
Spr 2014	3	Math	4	3	1.1	25	9.1	9	22	17
Spr 2014	3	Math	5	0	0.0	25	9.1	9	31	16
Spr 2014	3	Math	6	3	1.1	28	10.2	10	39	15
Spr 2014	3	Math	7	4	1.5	32	11.7	11	46	14
Spr 2014	3	Math	8	5	1.8	37	13.5	13	53	14
Spr 2014	3	Math	9	6	2.2	43	15.7	15	59	13
Spr 2014	3	Math	10	4	1.5	47	17.2	16	65	13
Spr 2014	3	Math	11	16	5.8	63	23.0	20	71	13
Spr 2014	3	Math	12	4	1.5	67	24.5	24	77	13
Spr 2014	3	Math	13	11	4.0	78	28.5	26	83	13
Spr 2014	3	Math	14	8	2.9	86	31.4	30	88	13
Spr 2014	3	Math	15	15	5.5	101	36.9	34	94	13
Spr 2014	3	Math	16	9	3.3	110	40.1	39	100	13
Spr 2014	3	Math	17	14	5.1	124	45.3	43	106	14
Spr 2014	3	Math	18	17	6.2	141	51.5	48	112	14
Spr 2014	3	Math	19	19	6.9	160	58.4	55	119	15
Spr 2014	3	Math	20	20	7.3	180	65.7	62	127	16
Spr 2014	3	Math	21	24	8.8	204	74.5	70	136	17
Spr 2014	3	Math	22	26	9.5	230	83.9	79	146	19
Spr 2014	3	Math	23	18	6.6	248	90.5	87	160	22
Spr 2014	3	Math	24	20	7.3	268	97.8	94	183	31
Spr 2014	3	Math	25	6	2.2	274	100.0	99	200	55

Grade 4

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	4	Math	0	26	7.8	26	7.8	4	1	68
Spr 2014	4	Math	1	2	0.6	28	8.4	8	1	38
Spr 2014	4	Math	2	0	0.0	28	8.4	8	1	28
Spr 2014	4	Math	3	0	0.0	28	8.4	8	1	23
Spr 2014	4	Math	4	0	0.0	28	8.4	8	1	20
Spr 2014	4	Math	5	0	0.0	28	8.4	8	6	19
Spr 2014	4	Math	6	1	0.3	29	8.7	9	15	18
Spr 2014	4	Math	7	3	0.9	32	9.6	9	23	17
Spr 2014	4	Math	8	7	2.1	39	11.7	11	30	16
Spr 2014	4	Math	9	9	2.7	48	14.4	13	37	16
Spr 2014	4	Math	10	14	4.2	62	18.6	17	43	15
Spr 2014	4	Math	11	9	2.7	71	21.3	20	49	15
Spr 2014	4	Math	12	10	3.0	81	24.3	23	55	15
Spr 2014	4	Math	13	14	4.2	95	28.5	26	60	14
Spr 2014	4	Math	14	9	2.7	104	31.2	30	66	14
Spr 2014	4	Math	15	12	3.6	116	34.8	33	71	14
Spr 2014	4	Math	16	8	2.4	124	37.2	36	77	14
Spr 2014	4	Math	17	11	3.3	135	40.5	39	82	14
Spr 2014	4	Math	18	6	1.8	141	42.3	41	88	15
Spr 2014	4	Math	19	14	4.2	155	46.5	44	94	15
Spr 2014	4	Math	20	14	4.2	169	50.8	49	100	15
Spr 2014	4	Math	21	10	3.0	179	53.8	52	106	15
Spr 2014	4	Math	22	10	3.0	189	56.8	55	113	16
Spr 2014	4	Math	23	13	3.9	202	60.7	59	120	17
Spr 2014	4	Math	24	17	5.1	219	65.8	63	128	17
Spr 2014	4	Math	25	15	4.5	234	70.3	68	137	19
Spr 2014	4	Math	26	24	7.2	258	77.5	74	147	20
Spr 2014	4	Math	27	18	5.4	276	82.9	80	159	23
Spr 2014	4	Math	28	26	7.8	302	90.7	87	176	28
Spr 2014	4	Math	29	18	5.4	320	96.1	93	200	38
Spr 2014	4	Math	30	13	3.9	333	100.0	98	200	68

Grade 5

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	5	Math	0	25	7.6	25	7.6	4	1	68
Spr 2014	5	Math	1	1	0.3	26	7.9	8	1	38
Spr 2014	5	Math	2	1	0.3	27	8.2	8	1	27
Spr 2014	5	Math	3	1	0.3	28	8.5	8	1	23
Spr 2014	5	Math	4	0	0.0	28	8.5	8	5	20
Spr 2014	5	Math	5	1	0.3	29	8.8	9	15	19
Spr 2014	5	Math	6	0	0.0	29	8.8	9	24	18
Spr 2014	5	Math	7	2	0.6	31	9.4	9	32	17
Spr 2014	5	Math	8	3	0.9	34	10.3	10	39	16
Spr 2014	5	Math	9	7	2.1	41	12.4	11	46	15
Spr 2014	5	Math	10	12	3.6	53	16.0	14	52	15
Spr 2014	5	Math	11	17	5.1	70	21.1	19	58	15
Spr 2014	5	Math	12	17	5.1	87	26.3	24	64	15
Spr 2014	5	Math	13	9	2.7	96	29.0	28	70	14
Spr 2014	5	Math	14	10	3.0	106	32.0	31	75	14
Spr 2014	5	Math	15	5	1.5	111	33.5	33	81	14
Spr 2014	5	Math	16	7	2.1	118	35.6	35	87	14
Spr 2014	5	Math	17	10	3.0	128	38.7	37	92	14
Spr 2014	5	Math	18	6	1.8	134	40.5	40	98	15
Spr 2014	5	Math	19	11	3.3	145	43.8	42	104	15
Spr 2014	5	Math	20	16	4.8	161	48.6	46	110	15
Spr 2014	5	Math	21	12	3.6	173	52.3	50	116	16
Spr 2014	5	Math	22	10	3.0	183	55.3	54	123	16
Spr 2014	5	Math	23	11	3.3	194	58.6	57	130	17
Spr 2014	5	Math	24	15	4.5	209	63.1	61	138	18
Spr 2014	5	Math	25	21	6.3	230	69.5	66	147	19
Spr 2014	5	Math	26	23	6.9	253	76.4	73	157	20
Spr 2014	5	Math	27	23	6.9	276	83.4	80	170	23
Spr 2014	5	Math	28	20	6.0	296	89.4	86	187	27
Spr 2014	5	Math	29	13	3.9	309	93.4	91	200	38
Spr 2014	5	Math	30	22	6.6	331	100.0	97	200	68

Grade 6

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	6	Math	0	13	4.1	13	4.1	2	1	52
Spr 2014	6	Math	1	2	0.6	15	4.7	4	1	29
Spr 2014	6	Math	2	0	0.0	15	4.7	5	1	21
Spr 2014	6	Math	3	0	0.0	15	4.7	5	10	18
Spr 2014	6	Math	4	0	0.0	15	4.7	5	19	16
Spr 2014	6	Math	5	1	0.3	16	5.0	5	27	14
Spr 2014	6	Math	6	0	0.0	16	5.0	5	34	13
Spr 2014	6	Math	7	0	0.0	16	5.0	5	40	13
Spr 2014	6	Math	8	2	0.6	18	5.7	5	46	12
Spr 2014	6	Math	9	2	0.6	20	6.3	6	51	12
Spr 2014	6	Math	10	6	1.9	26	8.2	7	56	12
Spr 2014	6	Math	11	6	1.9	32	10.1	9	60	11
Spr 2014	6	Math	12	16	5.0	48	15.1	13	65	11
Spr 2014	6	Math	13	17	5.4	65	20.5	18	69	11
Spr 2014	6	Math	14	19	6.0	84	26.5	24	73	11
Spr 2014	6	Math	15	10	3.2	94	29.7	28	77	11
Spr 2014	6	Math	16	10	3.2	104	32.8	31	82	11
Spr 2014	6	Math	17	7	2.2	111	35.0	34	86	11
Spr 2014	6	Math	18	14	4.4	125	39.4	37	90	11
Spr 2014	6	Math	19	13	4.1	138	43.5	41	95	11
Spr 2014	6	Math	20	15	4.7	153	48.3	46	99	12
Spr 2014	6	Math	21	11	3.5	164	51.7	50	104	12
Spr 2014	6	Math	22	20	6.3	184	58.0	55	109	12
Spr 2014	6	Math	23	10	3.2	194	61.2	60	115	13
Spr 2014	6	Math	24	18	5.7	212	66.9	64	121	13
Spr 2014	6	Math	25	15	4.7	227	71.6	69	127	14
Spr 2014	6	Math	26	19	6.0	246	77.6	75	135	16
Spr 2014	6	Math	27	18	5.7	264	83.3	80	145	18
Spr 2014	6	Math	28	31	9.8	295	93.1	88	158	21
Spr 2014	6	Math	29	13	4.1	308	97.2	95	179	29
Spr 2014	6	Math	30	9	2.8	317	100.0	99	200	52

Grade 7

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	7	Math	0	26	7.8	26	7.8	4	1	63
Spr 2014	7	Math	1	0	0.0	26	7.8	8	1	35
Spr 2014	7	Math	2	0	0.0	26	7.8	8	1	26
Spr 2014	7	Math	3	0	0.0	26	7.8	8	1	21
Spr 2014	7	Math	4	0	0.0	26	7.8	8	1	19
Spr 2014	7	Math	5	0	0.0	26	7.8	8	8	17
Spr 2014	7	Math	6	3	0.9	29	8.7	8	16	16
Spr 2014	7	Math	7	1	0.3	30	9.0	9	24	16
Spr 2014	7	Math	8	4	1.2	34	10.2	10	30	15
Spr 2014	7	Math	9	2	0.6	36	10.8	11	37	14
Spr 2014	7	Math	10	9	2.7	45	13.6	12	43	14
Spr 2014	7	Math	11	6	1.8	51	15.4	14	48	14
Spr 2014	7	Math	12	7	2.1	58	17.5	16	54	14
Spr 2014	7	Math	13	12	3.6	70	21.1	19	59	13
Spr 2014	7	Math	14	8	2.4	78	23.5	22	64	13
Spr 2014	7	Math	15	10	3.0	88	26.5	25	69	13
Spr 2014	7	Math	16	11	3.3	99	29.8	28	74	13
Spr 2014	7	Math	17	9	2.7	108	32.5	31	79	13
Spr 2014	7	Math	18	20	6.0	128	38.6	36	85	14
Spr 2014	7	Math	19	22	6.6	150	45.2	42	90	14
Spr 2014	7	Math	20	8	2.4	158	47.6	46	96	14
Spr 2014	7	Math	21	12	3.6	170	51.2	49	101	14
Spr 2014	7	Math	22	11	3.3	181	54.5	53	108	15
Spr 2014	7	Math	23	17	5.1	198	59.6	57	114	15
Spr 2014	7	Math	24	13	3.9	211	63.6	62	121	16
Spr 2014	7	Math	25	20	6.0	231	69.6	67	130	17
Spr 2014	7	Math	26	15	4.5	246	74.1	72	139	19
Spr 2014	7	Math	27	29	8.7	275	82.8	78	151	21
Spr 2014	7	Math	28	23	6.9	298	89.8	86	166	26
Spr 2014	7	Math	29	22	6.6	320	96.4	93	192	35
Spr 2014	7	Math	30	12	3.6	332	100.0	98	200	63

Grade 8

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	8	Math	0	27	7.8	27	7.8	4	1	70
Spr 2014	8	Math	1	2	0.6	29	8.4	8	1	39
Spr 2014	8	Math	2	1	0.3	30	8.7	9	1	28
Spr 2014	8	Math	3	1	0.3	31	9.0	9	1	24
Spr 2014	8	Math	4	0	0.0	31	9.0	9	1	21
Spr 2014	8	Math	5	0	0.0	31	9.0	9	1	19
Spr 2014	8	Math	6	0	0.0	31	9.0	9	9	18
Spr 2014	8	Math	7	4	1.2	35	10.1	10	17	17
Spr 2014	8	Math	8	2	0.6	37	10.7	10	25	16
Spr 2014	8	Math	9	6	1.7	43	12.5	12	31	16
Spr 2014	8	Math	10	9	2.6	52	15.1	14	38	16
Spr 2014	8	Math	11	12	3.5	64	18.6	17	44	15
Spr 2014	8	Math	12	14	4.1	78	22.6	21	50	15
Spr 2014	8	Math	13	12	3.5	90	26.1	24	56	15
Spr 2014	8	Math	14	8	2.3	98	28.4	27	62	15
Spr 2014	8	Math	15	13	3.8	111	32.2	30	67	15
Spr 2014	8	Math	16	12	3.5	123	35.7	34	73	15
Spr 2014	8	Math	17	12	3.5	135	39.1	37	79	15
Spr 2014	8	Math	18	13	3.8	148	42.9	41	85	15
Spr 2014	8	Math	19	9	2.6	157	45.5	44	91	15
Spr 2014	8	Math	20	10	2.9	167	48.4	47	97	16
Spr 2014	8	Math	21	14	4.1	181	52.5	50	104	16
Spr 2014	8	Math	22	15	4.3	196	56.8	55	111	17
Spr 2014	8	Math	23	18	5.2	214	62.0	59	118	17
Spr 2014	8	Math	24	28	8.1	242	70.1	66	126	18
Spr 2014	8	Math	25	19	5.5	261	75.7	73	135	19
Spr 2014	8	Math	26	24	7.0	285	82.6	79	146	21
Spr 2014	8	Math	27	20	5.8	305	88.4	86	159	24
Spr 2014	8	Math	28	19	5.5	324	93.9	91	177	28
Spr 2014	8	Math	29	14	4.1	338	98.0	96	200	39
Spr 2014	8	Math	30	7	2.0	345	100.0	99	200	70

Grade 11

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	11	Math	0	16	5.3	16	5.3	3	1	94
Spr 2014	11	Math	1	2	0.7	18	5.9	6	1	52
Spr 2014	11	Math	2	2	0.7	20	6.6	6	1	38
Spr 2014	11	Math	3	0	0.0	20	6.6	7	1	32
Spr 2014	11	Math	4	0	0.0	20	6.6	7	1	28
Spr 2014	11	Math	5	2	0.7	22	7.3	7	1	26
Spr 2014	11	Math	6	1	0.3	23	7.6	7	1	24
Spr 2014	11	Math	7	2	0.7	25	8.3	8	1	23
Spr 2014	11	Math	8	7	2.3	32	10.6	9	1	22
Spr 2014	11	Math	9	4	1.3	36	11.9	11	2	22
Spr 2014	11	Math	10	5	1.7	41	13.5	13	11	21
Spr 2014	11	Math	11	15	5.0	56	18.5	16	20	21
Spr 2014	11	Math	12	7	2.3	63	20.8	20	28	20
Spr 2014	11	Math	13	5	1.7	68	22.4	22	36	20
Spr 2014	11	Math	14	8	2.6	76	25.1	24	44	20
Spr 2014	11	Math	15	6	2.0	82	27.1	26	52	20
Spr 2014	11	Math	16	11	3.6	93	30.7	29	59	20
Spr 2014	11	Math	17	9	3.0	102	33.7	32	67	20
Spr 2014	11	Math	18	14	4.6	116	38.3	36	75	20
Spr 2014	11	Math	19	14	4.6	130	42.9	41	83	20
Spr 2014	11	Math	20	8	2.6	138	45.5	44	92	21
Spr 2014	11	Math	21	14	4.6	152	50.2	48	100	21
Spr 2014	11	Math	22	18	5.9	170	56.1	53	110	22
Spr 2014	11	Math	23	17	5.6	187	61.7	59	120	23
Spr 2014	11	Math	24	25	8.3	212	70.0	66	130	24
Spr 2014	11	Math	25	12	4.0	224	73.9	72	143	26
Spr 2014	11	Math	26	22	7.3	246	81.2	78	157	28
Spr 2014	11	Math	27	18	5.9	264	87.1	84	174	32
Spr 2014	11	Math	28	17	5.6	281	92.7	90	197	38
Spr 2014	11	Math	29	12	4.0	293	96.7	95	200	52
Spr 2014	11	Math	30	10	3.3	303	100.0	98	200	94

Appendix S: Science Raw-to-Scale Conversion Tables and Distributions of Ability

The charts are simple displays of Scale Score, Raw Score, and percentile rank. The raw score and percentile rank for any Scale Score can be read directly from chart.

The proformance levels *Meets Standards* begins at a Scale Score of 85 and *Exceeds Standards* begins at 135. *Below Standards* is a Scale Score of 84 and below.

The table is a traditional table that was used to create the chart. This table would be used to retrieve the Scale Score or percentile rank for a given raw score. It also includes counts and percentages at each score.

Grade 5

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	5	Science	0	25	7.7	25	7.7	4	1	65
Spr 2014	5	Science	1	2	0.6	27	8.3	8	1	36
Spr 2014	5	Science	2	2	0.6	29	8.9	9	1	26
Spr 2014	5	Science	3	0	0.0	29	8.9	9	11	22
Spr 2014	5	Science	4	1	0.3	30	9.2	9	24	20
Spr 2014	5	Science	5	5	1.5	35	10.7	10	34	18
Spr 2014	5	Science	6	8	2.5	43	13.2	12	43	17
Spr 2014	5	Science	7	4	1.2	47	14.4	14	51	16
Spr 2014	5	Science	8	12	3.7	59	18.1	16	58	16
Spr 2014	5	Science	9	10	3.1	69	21.2	20	65	15
Spr 2014	5	Science	10	13	4.0	82	25.2	23	71	15
Spr 2014	5	Science	11	13	4.0	95	29.1	27	78	15
Spr 2014	5	Science	12	11	3.4	106	32.5	31	84	15
Spr 2014	5	Science	13	16	4.9	122	37.4	35	90	15
Spr 2014	5	Science	14	7	2.1	129	39.6	38	97	15
Spr 2014	5	Science	15	7	2.1	136	41.7	41	103	15
Spr 2014	5	Science	16	14	4.3	150	46.0	44	109	15
Spr 2014	5	Science	17	8	2.5	158	48.5	47	116	16
Spr 2014	5	Science	18	16	4.9	174	53.4	51	124	16
Spr 2014	5	Science	19	16	4.9	190	58.3	56	131	17
Spr 2014	5	Science	20	21	6.4	211	64.7	62	140	18
Spr 2014	5	Science	21	15	4.6	226	69.3	67	150	20
Spr 2014	5	Science	22	27	8.3	253	77.6	73	163	22
Spr 2014	5	Science	23	29	8.9	282	86.5	82	179	26
Spr 2014	5	Science	24	23	7.1	305	93.6	90	200	36
Spr 2014	5	Science	25	21	6.4	326	100.0	97	200	65

Grade 8

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	8	Science	0	27	8.1	27	8.1	4	1	72
Spr 2014	8	Science	1	3	0.9	30	9.0	9	1	40
Spr 2014	8	Science	2	0	0.0	30	9.0	9	1	29
Spr 2014	8	Science	3	0	0.0	30	9.0	9	1	25
Spr 2014	8	Science	4	0	0.0	30	9.0	9	2	22
Spr 2014	8	Science	5	2	0.6	32	9.6	9	14	20
Spr 2014	8	Science	6	6	1.8	38	11.4	11	23	19
Spr 2014	8	Science	7	5	1.5	43	12.9	12	32	18
Spr 2014	8	Science	8	12	3.6	55	16.5	15	40	17
Spr 2014	8	Science	9	9	2.7	64	19.2	18	47	17
Spr 2014	8	Science	10	11	3.3	75	22.5	21	54	16
Spr 2014	8	Science	11	17	5.1	92	27.6	25	61	16
Spr 2014	8	Science	12	8	2.4	100	30.0	29	68	16
Spr 2014	8	Science	13	8	2.4	108	32.4	31	75	16
Spr 2014	8	Science	14	12	3.6	120	36.0	34	81	16
Spr 2014	8	Science	15	15	4.5	135	40.5	38	88	16
Spr 2014	8	Science	16	14	4.2	149	44.7	43	95	17
Spr 2014	8	Science	17	13	3.9	162	48.6	47	102	17
Spr 2014	8	Science	18	14	4.2	176	52.9	51	110	18
Spr 2014	8	Science	19	17	5.1	193	58.0	55	119	19
Spr 2014	8	Science	20	20	6.0	213	64.0	61	128	20
Spr 2014	8	Science	21	20	6.0	233	70.0	67	139	22
Spr 2014	8	Science	22	33	9.9	266	79.9	75	153	24
Spr 2014	8	Science	23	25	7.5	291	87.4	84	171	29
Spr 2014	8	Science	24	24	7.2	315	94.6	91	200	40
Spr 2014	8	Science	25	18	5.4	333	100.0	97	200	72

Grade 11

Admin	Grade	Content Area	Raw Score	Count	Percent	Cum Count	Cum Percent	Percentile	Scale Score	S.E.
Spr 2014	11	Science	0	20	6.8	20	6.8	3	1	62
Spr 2014	11	Science	1	1	0.3	21	7.1	7	1	35
Spr 2014	11	Science	2	1	0.3	22	7.4	7	1	25
Spr 2014	11	Science	3	0	0.0	22	7.4	7	1	21
Spr 2014	11	Science	4	1	0.3	23	7.8	8	3	19
Spr 2014	11	Science	5	3	1.0	26	8.8	8	12	17
Spr 2014	11	Science	6	0	0.0	26	8.8	9	20	16
Spr 2014	11	Science	7	4	1.4	30	10.1	9	27	15
Spr 2014	11	Science	8	7	2.4	37	12.5	11	34	14
Spr 2014	11	Science	9	9	3.0	46	15.5	14	39	14
Spr 2014	11	Science	10	4	1.4	50	16.9	16	45	14
Spr 2014	11	Science	11	3	1.0	53	17.9	17	51	13
Spr 2014	11	Science	12	3	1.0	56	18.9	18	56	13
Spr 2014	11	Science	13	6	2.0	62	20.9	20	61	13
Spr 2014	11	Science	14	6	2.0	68	23.0	22	66	13
Spr 2014	11	Science	15	8	2.7	76	25.7	24	71	13
Spr 2014	11	Science	16	6	2.0	82	27.7	27	76	13
Spr 2014	11	Science	17	4	1.4	86	29.1	28	81	13
Spr 2014	11	Science	18	8	2.7	94	31.8	30	86	13
Spr 2014	11	Science	19	3	1.0	97	32.8	32	91	13
Spr 2014	11	Science	20	17	5.7	114	38.5	36	96	14
Spr 2014	11	Science	21	14	4.7	128	43.2	41	102	14
Spr 2014	11	Science	22	10	3.4	138	46.6	45	108	15
Spr 2014	11	Science	23	10	3.4	148	50.0	48	115	15
Spr 2014	11	Science	24	14	4.7	162	54.7	52	122	16
Spr 2014	11	Science	25	19	6.4	181	61.1	58	130	17
Spr 2014	11	Science	26	27	9.1	208	70.3	66	139	19
Spr 2014	11	Science	27	28	9.5	236	79.7	75	151	21
Spr 2014	11	Science	28	23	7.8	259	87.5	84	166	25
Spr 2014	11	Science	29	24	8.1	283	95.6	92	192	35
Spr 2014	11	Science	30	13	4.4	296	100.0	98	200	62

Appendix T: Reading, Mathematics, and Science Demographic Summary Sheets

***AM=American Indian, AS=Asian, BL=African American/Black, PI=Native Hawaiian or other Pacific Islander, WH=White, HI= Hispanic, MU=Multiple Ethnicities**

Reading : Grade 3

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		282	16.3	7.1	108.7	52.4	30.5	38.7	30.9
Gender	Male	182	16.9	6.8	113.4	51.2	28.0	37.4	34.6
	Female	100	15.2	7.5	100.2	53.7	35.0	41.0	24.0
Ethnicity	AM	11	17.5	7.7	119.3	58.7	27.3	36.4	36.4
	AS	6	17.0	8.3	115.7	60.7	33.3	33.3	33.3
	BL	20	17.2	5.6	110.7	39.9	20.0	55.0	25.0
	PI	0							
	WH	168	16.3	6.9	108.8	51.3	31.0	38.1	31.0
	HI	64	14.9	8.2	98.5	57.9	37.5	35.9	26.6
	MU	13	20.8	3.5	142.8	35.7	7.7	38.5	53.8
		3	18.3	9.9	135.3	79.9	33.3	0.0	66.7
Special Ed	No	279	16.3	7.1	108.4	52.2	30.5	39.1	30.5
	Yes								
		279	16.3	7.1	108.4	52.6	30.8	38.4	30.8
ELL	No	3	21.3	1.5	139.7	18.2	0.0	66.7	33.3
	Yes								
		98	15.6	7.4	103.6	54.2	33.7	38.8	27.6
FLS	No	175	16.8	6.9	111.9	51.5	28.6	38.9	32.6
	Yes								

Grade 4

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		332	15.3	6.9	106.0	51.3	31.6	39.2	29.2
Gender	Male	223	15.6	6.5	108.6	48.9	29.1	40.8	30.0
	Female	109	14.5	7.6	100.6	55.8	36.7	35.8	27.5
Ethnicity	AM	10	15.3	7.4	104.2	54.5	20.0	60.0	20.0
	AS	5	11.6	7.8	77.4	50.1	40.0	60.0	0.0
	BL	23	15.7	6.6	107.8	49.0	21.7	56.5	21.7
	PI	0							
	WH	211	15.7	6.9	110.0	52.3	31.8	35.5	32.7
	HI	72	13.3	6.8	90.5	46.7	38.9	41.7	19.4
	MU	11	20.0	4.3	141.5	37.6	9.1	27.3	63.6
Special Ed	No	8	20.9	3.1	148.1	34.6	0.0	37.5	62.5
	Yes	324	15.1	6.9	105.0	51.3	32.4	39.2	28.4
ELL	No	330	15.2	6.9	105.7	51.3	31.8	39.4	28.8
	Yes	2	22.5	0.7	160.0	9.9	0.0	0.0	100.0
FLS	No	137	14.3	6.9	100.0	50.7	40.1	35.0	24.8
	Yes	188	15.9	6.8	110.0	50.5	25.5	43.6	30.9

Grade 5

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		326	16.0	7.1	113.2	59.1	33.4	26.1	40.5
Gender	Male	220	16.0	6.9	112.6	58.1	35.0	26.4	38.6
	Female	106	16.1	7.6	114.4	61.4	30.2	25.5	44.3
Ethnicity	AM	4	13.3	10.9	97.8	87.6	50.0	0.0	50.0
	AS	3	18.0	6.9	127.3	56.6	33.3	0.0	66.7
	BL	38	15.5	7.9	108.6	60.6	28.9	31.6	39.5
	PI	0							
	WH	218	16.2	7.3	115.3	61.1	33.0	25.7	41.3
	HI	52	16.2	5.8	112.5	49.5	36.5	25.0	38.5
	MU	11	14.0	7.2	92.6	53.1	36.4	36.4	27.3
Special Ed	No	4	19.8	4.3	143.8	47.4	0.0	50.0	50.0
	Yes	322	16.0	7.2	112.8	59.2	33.9	25.8	40.4
ELL	No	325	16.0	7.1	113.1	59.2	33.5	26.2	40.3
	Yes	1	21.0		146.0		0.0	0.0	100.0
FLS	No	132	14.5	7.2	99.8	57.8	43.2	26.5	30.3
	Yes	182	17.1	6.9	122.8	58.7	27.5	24.7	47.8

Grade 6

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		319	16.7	6.6	112.4	48.3	32.3	37.0	30.7
Gender	Male	196	16.6	6.5	111.9	47.7	32.7	38.3	29.1
	Female	123	16.7	6.7	113.4	49.4	31.7	35.0	33.3
Ethnicity	AM	5	12.2	11.3	78.6	72.7	40.0	40.0	20.0
	AS	3	15.0	7.0	98.3	42.7	33.3	33.3	33.3
	BL	37	16.3	6.7	108.3	45.4	35.1	32.4	32.4
	PI	0							
	WH	194	16.3	6.6	110.8	49.3	35.1	37.1	27.8

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
	HI	67	17.7	6.1	118.4	44.2	23.9	43.3	32.8
	MU	13	19.2	6.5	133.9	49.0	23.1	15.4	61.5
Special Ed	No	8	16.9	7.2	109.4	45.2	25.0	50.0	25.0
	Yes	311	16.7	6.6	112.5	48.4	32.5	36.7	30.9
ELL	No	315	16.6	6.6	111.7	48.1	32.7	37.1	30.2
	Yes	4	23.0	2.7	168.8	35.9	0.0	25.0	75.0
FLS	No	128	15.0	6.7	100.7	47.4	42.2	36.7	21.1
	Yes	186	17.7	6.4	120.6	47.9	25.8	36.0	38.2

Grade 7

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		334	16.7	7.2	110.0	60.2	34.1	25.1	40.7
Gender	Male	220	16.6	7.3	110.0	61.0	35.0	23.2	41.8
	Female	114	16.9	6.9	110.1	58.8	32.5	28.9	38.6
Ethnicity	AM	7	16.6	9.7	112.1	74.7	28.6	0.0	71.4
	AS	6	12.7	6.4	71.5	36.6	50.0	50.0	0.0
	BL	40	16.2	7.2	105.6	59.9	45.0	15.0	40.0
	PI	0							
	WH	211	16.9	7.3	112.0	61.1	31.3	27.5	41.2
	HI	53	16.8	6.5	108.6	55.3	37.7	24.5	37.7
	MU	17	16.9	7.6	113.0	66.7	29.4	23.5	47.1
Special Ed	No	4	16.5	4.9	100.0	42.1	50.0	25.0	25.0
	Yes	330	16.7	7.2	110.2	60.4	33.9	25.2	40.9
ELL	No	332	16.7	7.2	109.7	60.2	34.3	25.3	40.4
	Yes	2	23.0	0.0	169.0	0.0	0.0	0.0	100.0
FLS	No	139	14.8	7.9	94.9	63.5	46.8	20.1	33.1
	Yes	187	18.0	6.3	120.3	55.2	25.1	28.9	46.0

Grade 8

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		337	16.0	7.4	108.5	54.2	33.5	28.5	38.0
Gender	Male	204	16.3	7.2	110.7	53.6	32.4	27.5	40.2
	Female	133	15.6	7.6	105.3	55.1	35.3	30.1	34.6
Ethnicity	AM	2	15.5	7.8	101.0	49.5	50.0	0.0	50.0
	AS	14	10.9	7.6	72.3	52.7	71.4	21.4	7.1
	BL	31	18.1	6.2	120.2	44.3	12.9	41.9	45.2
	PI	0							
	WH	225	15.9	7.6	108.4	56.4	34.7	25.8	39.6
	HI	48	16.4	6.1	108.3	44.8	29.2	41.7	29.2
	MU	17	17.4	7.6	121.3	59.2	35.3	11.8	52.9
Special Ed	No	5	20.6	3.4	138.0	28.3	0.0	40.0	60.0
	Yes	332	15.9	7.4	108.1	54.4	34.0	28.3	37.7
ELL	No	337	16.0	7.4	108.5	54.2	33.5	28.5	38.0
	Yes	0							
FLS	No	146	14.8	7.9	100.3	57.2	41.8	23.3	34.9
	Yes	183	17.0	6.8	114.8	51.0	27.3	32.8	39.9

Grade 11

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		297	17.6	7.3	114.4	56.8	32.0	25.3	42.8
Gender	Male	174	17.5	7.5	114.0	57.0	30.5	26.4	43.1
	Female	123	17.6	7.1	114.9	56.8	34.1	23.6	42.3
Ethnicity	AM	7	16.1	8.8	100.9	59.2	28.6	42.9	28.6
	AS	4	19.3	4.8	120.3	39.6	25.0	25.0	50.0
	BL	37	16.5	7.9	105.0	56.6	35.1	27.0	37.8
	PI	0							
	WH	202	18.0	7.2	118.8	57.4	30.2	23.3	46.5

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
	HI	34	16.0	7.7	100.9	56.4	38.2	29.4	32.4
	MU	13	17.9	6.3	112.8	52.8	38.5	30.8	30.8
Special Ed	No	3	20.0	4.6	129.3	46.5	33.3	33.3	33.3
	Yes	294	17.5	7.3	114.2	57.0	32.0	25.2	42.9
ELL	No	295	17.5	7.3	114.3	57.0	32.2	24.7	43.1
	Yes	2	21.0	0.0	127.0	0.0	0.0	100.0	0.0
FLS	No	148	16.6	7.6	107.0	57.8	39.2	23.0	37.8
	Yes	148	18.5	6.9	121.3	55.1	25.0	27.7	47.3

Mathematics

Grade 3

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		276	16.2	6.9	107.4	49.8	29.0	37.0	34.1
Gender	Male	177	16.9	6.7	112.6	49.5	26.0	35.6	38.4
	Female	99	15.0	7.1	98.0	49.0	34.3	39.4	26.3
Ethnicity	AM	11	17.5	8.0	122.7	61.0	18.2	27.3	54.5
	AS	6	16.0	8.0	102.3	54.8	33.3	33.3	33.3
	BL	20	17.9	5.8	119.8	45.2	20.0	45.0	35.0
	PI	0							
	WH	166	16.3	6.5	107.7	47.3	30.1	37.3	32.5
	HI	60	14.4	8.0	94.5	56.2	36.7	31.7	31.7
	MU	13	20.0	2.7	132.9	30.1	0.0	53.8	46.2
Special Ed	No	3	18.3	6.4	122.3	46.0	33.3	0.0	66.7
	Yes	273	16.2	6.9	107.2	49.9	28.9	37.4	33.7
ELL	No	273	16.2	6.9	107.0	49.8	29.3	36.6	34.1
	Yes	3	20.7	2.9	140.3	37.0	0.0	66.7	33.3
FLS	No	95	15.2	7.2	99.5	50.6	34.7	37.9	27.4
	Yes	172	16.8	6.7	112.0	48.9	25.6	36.0	38.4

Grade 4

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		333	18.8	8.6	103.4	58.2	40.5	25.2	34.2
Gender	Male	222	19.1	8.1	105.5	56.1	39.6	25.7	34.7
	Female	111	18.0	9.6	99.2	62.2	42.3	24.3	33.3
Ethnicity	AM	10	18.7	8.1	96.8	44.8	20.0	60.0	20.0
	AS	5	18.8	11.1	103.8	64.7	20.0	40.0	40.0
	BL	23	19.3	8.7	106.4	57.8	34.8	30.4	34.8
	PI	0							
	WH	212	19.1	8.4	105.8	58.3	40.6	23.6	35.8
	HI	72	16.7	9.1	90.1	59.3	51.4	23.6	25.0
	MU	11	25.1	4.5	145.6	37.3	9.1	18.2	72.7
Special Ed	No	8	25.5	3.7	149.1	38.9	0.0	37.5	62.5
	Yes	325	18.6	8.7	102.3	58.2	41.5	24.9	33.5
ELL	No	330	18.7	8.6	103.1	58.0	40.6	25.5	33.9
	Yes	3	22.7	11.0	139.7	84.6	33.3	0.0	66.7
FLS	No	139	17.8	8.3	95.9	55.7	48.2	21.6	30.2
	Yes	186	19.5	8.6	108.4	58.3	34.9	29.0	36.0

Grade 5

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		331	19.0	8.7	113.4	58.7	33.5	25.1	41.4
Gender	Male	219	18.7	8.5	110.8	57.7	34.7	27.4	37.9
	Female	112	19.7	8.9	118.4	60.5	31.3	20.5	48.2
Ethnicity	AM	4	15.8	13.1	95.5	85.7	50.0	25.0	25.0
	AS	3	17.0	7.5	95.3	48.0	33.3	33.3	33.3
	BL	38	18.3	9.5	107.9	61.6	31.6	28.9	39.5
	PI	0							

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
	WH	222	18.9	8.8	112.8	59.6	34.7	23.9	41.4
	HI	53	20.2	7.4	121.2	53.3	30.2	28.3	41.5
	MU	11	19.8	8.8	116.9	56.1	27.3	18.2	54.5
Special Ed	No	4	20.0	6.5	113.8	41.9	25.0	50.0	25.0
	Yes	327	19.0	8.7	113.3	58.9	33.6	24.8	41.6
ELL	No	330	19.0	8.7	113.1	58.6	33.6	25.2	41.2
	Yes	1	29.0		200.0		0.0	0.0	100.0
FLS	No	135	17.0	8.6	99.1	56.5	43.0	27.4	29.6
	Yes	184	20.4	8.4	122.8	58.3	27.2	23.9	48.9

Grade 6

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		317	19.8	7.4	105.6	43.4	32.8	38.8	28.4
Gender	Male	190	20.0	7.2	107.1	43.0	33.2	38.4	28.4
	Female	127	19.5	7.6	103.3	43.9	32.3	39.4	28.3
Ethnicity	AM	5	13.4	12.3	67.2	60.7	40.0	60.0	0.0
	AS	3	20.3	7.2	104.3	34.2	33.3	66.7	0.0
	BL	36	19.7	6.9	104.4	39.9	36.1	38.9	25.0
	PI	0							
	WH	196	19.3	7.2	102.3	42.3	35.2	41.3	23.5
	HI	63	21.2	7.1	113.2	41.6	25.4	34.9	39.7
	MU	14	23.3	8.8	133.1	55.8	21.4	7.1	71.4
Special Ed	No	7	19.7	6.4	102.0	32.5	42.9	42.9	14.3
	Yes	310	19.8	7.4	105.6	43.6	32.6	38.7	28.7
ELL	No	313	19.7	7.4	105.1	43.4	33.2	39.0	27.8
	Yes	4	25.5	3.8	137.5	27.9	0.0	25.0	75.0
FLS	No	131	18.1	7.6	95.6	43.4	41.2	42.7	16.0
	Yes	181	20.9	7.1	112.3	42.5	27.6	35.4	37.0

Grade 7

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		332	19.6	8.3	104.4	53.7	32.5	37.0	30.4
Gender	Male	216	19.2	8.6	102.4	55.1	33.3	34.3	32.4
	Female	116	20.3	7.6	108.0	51.1	31.0	42.2	26.7
Ethnicity	AM	7	20.1	10.8	108.6	61.9	28.6	14.3	57.1
	AS	6	18.7	9.2	92.0	45.3	16.7	83.3	0.0
	BL	39	19.3	8.1	99.7	49.1	35.9	35.9	28.2
	PI	0							
	WH	208	19.7	8.3	105.1	54.7	32.7	37.0	30.3
	HI	56	19.9	8.1	107.0	55.8	30.4	37.5	32.1
	MU	16	19.3	8.1	99.5	48.9	37.5	31.3	31.3
Special Ed	No	5	19.0	7.8	101.6	59.7	60.0	20.0	20.0
	Yes	327	19.6	8.3	104.4	53.7	32.1	37.3	30.6
ELL	No	330	19.6	8.2	103.8	53.4	32.7	37.3	30.0
	Yes	2	29.5	0.7	196.0	5.7	0.0	0.0	100.0
FLS	No	138	17.8	8.9	93.5	55.8	44.9	30.4	24.6
	Yes	186	20.9	7.5	112.1	50.6	23.7	42.5	33.9

Grade 8

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		344	18.7	8.3	99.2	55.0	39.2	30.8	29.9
Gender	Male	209	19.1	8.4	102.4	56.9	39.2	27.3	33.5
	Female	135	18.1	8.1	94.1	51.7	39.3	36.3	24.4
Ethnicity	AM	2	18.0	2.8	85.0	17.0	50.0	50.0	0.0
	AS	14	12.8	8.7	60.0	45.9	71.4	28.6	0.0
	BL	33	20.6	7.1	109.9	48.3	27.3	39.4	33.3
	PI	0							
	WH	230	18.5	8.6	98.4	57.1	40.9	28.3	30.9

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
	HI	48	19.3	7.6	101.9	51.0	35.4	33.3	31.3
	MU	17	21.5	5.8	115.4	47.3	23.5	41.2	35.3
Special Ed	No	5	22.8	4.9	126.8	48.2	0.0	60.0	40.0
	Yes	339	18.6	8.3	98.8	55.0	39.8	30.4	29.8
ELL	No	344	18.7	8.3	99.2	55.0	39.2	30.8	29.9
	Yes	0							
FLS	No	150	17.1	8.6	88.8	54.9	48.0	30.0	22.0
	Yes	186	20.0	7.8	107.7	53.5	31.2	32.8	36.0

Grade 11

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		304	19.3	8.0	99.9	63.9	43.1	27.0	29.9
Gender	Male	179	19.3	8.1	100.9	65.5	43.0	25.7	31.3
	Female	125	19.3	7.8	98.4	61.8	43.2	28.8	28.0
Ethnicity	AM	7	17.3	9.9	86.7	70.3	42.9	42.9	14.3
	AS	4	21.5	7.7	115.0	75.6	50.0	0.0	50.0
	BL	37	17.1	8.1	79.4	60.2	56.8	18.9	24.3
	PI	0							
	WH	207	19.7	7.9	104.0	63.4	40.1	28.0	31.9
	HI	34	18.3	8.5	91.4	66.5	50.0	26.5	23.5
	MU	15	21.0	7.1	113.8	65.3	33.3	33.3	33.3
Special Ed	No	3	22.0	5.6	121.3	67.6	33.3	33.3	33.3
	Yes	301	19.3	8.0	99.6	64.0	43.2	26.9	29.9
ELL	No	302	19.3	8.0	99.8	64.1	43.4	26.5	30.1
	Yes	2	22.5	2.1	115.0	21.2	0.0	100.0	0.0
FLS	No	149	18.2	8.3	91.7	64.5	49.7	24.2	26.2
	Yes	154	20.3	7.6	107.5	62.7	37.0	29.9	33.1

Science

Grade 5

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		325	15.8	7.4	116.7	59.0	32.3	25.8	41.8
Gender	Male	216	15.7	7.4	116.1	58.9	34.3	25.5	40.3
	Female	109	16.0	7.5	118.0	59.6	28.4	26.6	45.0
Ethnicity	AM	4	11.8	11.0	86.3	82.9	50.0	25.0	25.0
	AS	3	16.7	5.8	117.0	39.8	33.3	0.0	66.7
	BL	37	14.8	7.9	107.9	61.1	29.7	32.4	37.8
	PI	0							
	WH	216	16.0	7.6	118.7	61.1	33.3	24.1	42.6
	HI	54	15.9	6.2	116.0	49.2	29.6	31.5	38.9
	MU	11	16.8	7.4	122.9	56.7	27.3	18.2	54.5
Special Ed	No	4	18.5	2.5	130.0	23.1	0.0	75.0	25.0
	Yes	321	15.8	7.4	116.6	59.3	32.7	25.2	42.1
ELL	No	324	15.8	7.4	116.6	59.1	32.4	25.9	41.7
	Yes	1	22.0		163.0		0.0	0.0	100.0
FLS	No	132	14.4	7.4	105.5	58.7	40.9	28.0	31.1
	Yes	181	16.8	7.3	124.4	58.5	27.1	22.7	50.3

Grade 8

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		333	15.9	7.3	106.5	59.9	36.3	27.9	35.7
Gender	Male	203	16.3	7.3	110.5	60.3	33.5	29.1	37.4
	Female	130	15.2	7.4	100.2	58.9	40.8	26.2	33.1
Ethnicity	AM	2	13.5	3.5	78.0	24.0	50.0	50.0	0.0
	AS	14	11.1	7.7	67.1	52.3	57.1	35.7	7.1
	BL	31	18.5	5.7	124.5	49.0	19.4	35.5	45.2
	PI	0							

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
	WH	221	15.7	7.6	105.9	62.2	37.1	27.6	35.3
	HI	48	16.0	6.5	105.3	54.3	37.5	25.0	37.5
	MU	17	17.4	6.9	119.8	59.0	35.3	17.6	47.1
Special Ed	No	5	20.0	6.0	145.2	61.4	20.0	20.0	60.0
	Yes	328	15.8	7.3	105.9	59.8	36.6	28.0	35.4
ELL	No	333	15.9	7.3	106.5	59.9	36.3	27.9	35.7
	Yes	0							
FLS	No	147	14.7	7.8	97.2	61.2	42.2	27.2	30.6
	Yes	178	16.9	6.9	113.9	57.8	30.3	29.8	39.9

Grade 11

Group	Subgroup	Valid N	Raw Scores		Scale Scores		Percent in Performance Level		
			Mean	SD	Mean	SD	Below	Meets	Exceeds
Overall		296	20.4	8.6	110.8	56.1	29.1	32.1	38.9
Gender	Male	173	20.5	8.7	112.4	57.0	27.7	31.2	41.0
	Female	123	20.1	8.5	108.6	55.0	30.9	33.3	35.8
Ethnicity	AM	7	19.4	11.8	106.9	71.9	28.6	28.6	42.9
	AS	4	19.0	8.0	96.0	47.1	50.0	25.0	25.0
	BL	37	18.9	8.8	99.0	53.0	35.1	32.4	32.4
	PI	0							
	WH	201	20.9	8.6	115.0	56.7	26.9	31.3	41.8
	HI	34	18.5	9.2	97.8	56.6	38.2	32.4	29.4
	MU	13	22.4	5.6	121.3	44.9	15.4	46.2	38.5
Special Ed	No	3	23.7	4.5	126.3	37.7	0.0	66.7	33.3
	Yes	293	20.3	8.7	110.7	56.3	29.4	31.7	38.9
ELL	No	294	20.4	8.7	110.9	56.3	29.3	31.6	39.1
	Yes	2	20.0	0.0	96.0	0.0	0.0	100.0	0.0
FLS	No	147	19.0	9.1	101.9	57.2	36.1	31.3	32.7
	Yes								

Appendix U: Reading, Mathematics, and Science Strand Reliability and SEM

***L=Total Number of Items per Strand, Reliability=Coefficient Alpha, SEM= Standard Error of Measurement in raw score metric**

Content	Code	Strand
Reading	R.1	Vocabulary
	R.2	Comprehension
Mathematics	M.1	Number Sense
	M.2	Geometric/Measurement
	M.3	Algebraic
	M.4	Data Analysis/Probability
Science	S.1	Inquiry, the Nature of Science, and Technology
	S.2	Physical Science
	S.3	Life Science
	S.4	Earth and Space Science

Grade 3:

Grade 3	L	Reliability	SEM
R.1	9	0.83	1.09
R.2	16	0.89	1.52
M.1	9	0.82	1.16
M.2	7	0.82	0.90
M.3	5	0.65	0.92
M.4	4	0.66	0.79

Grade 4:

Grade 4	L	Reliability	SEM
R.1	8	0.77	1.12
R.2	17	0.88	1.66
M.1	11	0.86	1.27
M.2	9	0.83	1.12
M.3	6	0.80	0.91
M.4	4	0.55	0.84

Grade 5:

Grade 5	L	Reliability	SEM
R.1	8	0.81	1.08
R.2	17	0.89	1.62
M.1	14	0.89	1.41
M.2	7	0.83	0.92
M.3	4	0.65	0.81
M.4	5	0.73	0.85
S.1	6	0.70	1.02
S.2	6	0.83	0.87
S.3	7	0.80	1.00
S.4	6	0.81	0.86

Grade 6:

Grade 6	L	Reliability	SEM
R.1	8	0.73	1.12
R.2	17	0.88	1.61
M.1	11	0.78	1.37
M.2	6	0.78	0.87
M.3	8	0.67	1.22
M.4	5	0.64	0.82

Grade 7:

Grade 7	L	Reliability	SEM
R.1	7	0.75	1.02
R.2	18	0.92	1.52
M.1	8	0.80	1.08
M.2	9	0.81	1.16
M.3	5	0.62	0.93
M.4	8	0.85	0.99

Grade 8:

Grade 8	L	Reliability	SEM
R.1	7	0.87	0.88
R.2	18	0.90	1.62
M.1	8	0.76	1.15
M.2	8	0.80	1.04
M.3	6	0.71	0.99
M.4	8	0.83	1.07
S.1	5	0.71	0.85
S.2	7	0.76	1.06
S.3	9	0.87	1.10
S.4	4	0.66	0.77

Grade 11:

Grade 11	L	Reliability	SEM
R.1	7	0.82	0.92
R.2	18	0.92	1.48
M.1	7	0.74	1.08
M.2	10	0.82	1.21
M.3	9	0.83	1.07
M.4	4	0.57	0.84
S.1	4	0.62	0.82
S.2	8	0.83	1.03
S.3	9	0.88	0.97
S.4	7	0.82	0.92


DATA RECOGNITION
DRC
CORPORATION